

OCTOBER 1958 • 40 CENTS

Consumer BULLETIN

The Original Consumer Information Magazine
Testing and Reporting on Products since 1928



TESTS OF
CAMERAS

EXPOSURE METERS

35 mm. cameras

Sub-miniature cameras

Polaroid cameras

8 mm. movie cameras

Twin-lens reflex camera

Combination storm windows

Clothes dryers-II

Home fire alarm systems

Ratings of motion pictures

Phonograph records

SLIDE PROJECTORS



Combination storm windows

WHEN YOU CONSIDER the purchase of combination storm windows and screens, *keep their basic purposes in mind at all times.* Don't let a glib salesman sidetrack your attention to non-essentials or to special selling features he uses primarily to differentiate his product from those of his competitors. With respect to fuel savings, don't expect miracles from storm windows. The maximum possible saving due to tight-fitting storm windows has been found to be about 20 percent, and under many conditions the savings will be smaller. Thus increased *comfort* may be a more important consideration than fuel savings in deciding upon installation of storm windows. Possibly they should be put on certain windows only—those that are more exposed to cold winds, those in rooms more frequently used or harder to heat than others, those near which people habitually sit, or those in rooms where warmth and comfort are especially important, as the bathroom, nursery, or the room of an invalid or elderly person.

Regardless of which windows it is decided to cover with storm windows, it is *not* necessary to use the *same type* of storm window everywhere. For example, on ground level (where there is relatively little difficulty or hazard in mounting them from the outside), old-fashioned wood storm sash may be entirely suitable. Fitted with adjusters to tilt the frames outward, or built-in sash ventilators, such storm windows can be quite satisfactorily adjusted for ventilation. The thrifty homeowner, not averse to an occasional chore, should not fail to consider this solution of the storm window problem. But don't use this type above ground level; hanging and removing them from second-story windows can be really hazardous. If more than one type of storm window is to be used, due attention should, of course, be given to the over-all appearance of the house with the various storm windows in place. From some manufacturers, several types are available with similar outside appearance, and considerable savings can be effected without sacrificing uniform outside appearance, by selecting the lowest-cost type of combination that affords the features desired for each window.

Years ago, storm sash to be hung from the outside was the only type generally available, and it was common for a homeowner to have a complete set of storm windows of this kind and a separate set of screens. Each year, as cold weather ar-

The combination storm window business seems to attract more than its share of fly-by-night operators and "quick-buck boys." Misleading and downright untruthful advertising has been widespread. Especially prevalent has been "bait" advertising, in which a ridiculously low-priced aluminum window is offered as a come-on to attract the interest of a prospect, but the advertised product is then vigorously disparaged by the seller. Often he virtually refuses to supply it, and makes every effort to "switch" the customer to higher-priced windows selling at several times the advertised price.

Thus the first rule for buying combination storm windows is to buy from an established dealer with a reputation for integrity. Resist the blandishments of door-to-door salesmen with their well lubricated and perfectly aligned miniature models that may be far from representative of the product that would be put on your house. Local building supply dealers and lumberyards that are likely to be in business for years at the same old stand and, on that account, can't afford to be associated with shady sales tactics, or other sharp practices, are sources that should be looked to primarily. Look behind the facade of any dealer who specializes in storm windows to find out whether he has been in business a reasonable length of time and has a good reputation. Ask for the names of previous customers whose windows have been in place at least a year or more and visit some of these people to see the windows and find out how satisfactory they have been. If the dealer offers only the high-priced triple-track aluminum windows, look elsewhere to examine simpler designs, and combinations with wood frames. Consider also the offerings of mail-order stores such as those of Sears and Wards.

(Continued on page 23)

The Consumers' Observation Post

GARMENTS AND HOUSEHOLD FABRICS that need little or no ironing are increasing in popularity. Unfortunately some manufacturers are capitalizing on this demand by simply relabeling their products without making certain the quality is built into the product itself. It often turns out, according to Home Furnishings Daily, that phrases such as "drip-dry," "wash and hang," "no-iron," and "little ironing" are used with the important qualification "with proper handling" stressed only on an insert sheet. The term "proper handling" refers to washing and ironing instructions that must be followed carefully for best results. These directions are frequently thrown away or lost before the article is laundered. In the case of curtains, one firm is reported to be working on a sewed-in label that will provide instructions for "proper handling" when it comes time to launder them.

* * *

AUTOMOBILE INSURANCE COSTS continue to climb upward. One insurance executive predicts that the elaborate styling of the 1959 cars will bring still higher claim costs and higher insurance rates.

* * *

CONTROL AND PREVENTION OF SERIOUS TOOTH DECAY is possible by a special high protein, low sugar diet. Preventive measures recommended by Dr. Herman Becks, Professor of Dental Medicine at the University of California Medical Center, consist primarily in cutting down the amount of fermentable carbohydrates in the diet and stepping up protein intake. Dr. Becks points out that the average consumption of sugar runs well over 100 pounds per person per year, and when a patient with serious dental decay cooperates by greatly reducing his sugar intake the results are generally remarkable.

* * *

THE PRESENT FEDERAL GRADES OF QUALITY FOR BEEF have been criticized as not representing consumers' preferences. One complaint has been that there is too much fat and marbling in the high grades of beef. In a study, made at the University of Tennessee, of broiled loin steaks and braised round steaks, consumers who cooked the meat in their own homes definitely preferred the higher grades in all cases except when "choice" and "good" were compared. The samples were paired "choice" with "good," "choice" with "standard," "choice" with "commercial," "good" with "standard," "good" with "commercial," "standard" with "commercial." For both broiled loin steaks and braised round steaks, the average differences found by the consumers between "choice" and "good" were smaller and not conclusive. In the other samplings, the average preference favored the higher grades by a factor of 3 to 1 or 4 to 1.

* * *

KODACHROME FILM sent directly to Eastman Kodak Company, Rochester, N. Y., for processing will now be returned directly to the customer. For the first time since the federal government in 1954 ordered Kodak to discontinue selling the color film in a package deal with processing, users may now buy a mailing bag from dealers for forwarding the exposed film to Eastman's Rochester plant. The price of the new service covers processing costs plus mailing expenses and it is not included in the price of the film. Previously, film has been returned to the dealer and the customer has been obliged to call to pick it up.

* * *

IT IS QUALITY AND SERVICE that will be emphasized this year instead of cut prices. That was the view of many businessmen interviewed by The Wall Street Journal. It seems that the public is fed up with the "low price" appeal, no doubt due to the fact that they have discovered the fictitiousness of the so-called "list prices." In any event, consumers may hope for better service from appliance companies—at least that is the promise.

TOILET SOAP THAT HAS BEEN A HOUSEHOLD STAPLE for so many years is facing stiff competition. Although they are more expensive than soap, syndet bars are achieving popularity. Some producers are bringing out composite bars containing both soap and synthetic detergents. The advantage of such a blend is that in hard water the bar does not leave the sticky deposit of soap. In an examination of the problem, Drs. Foster D. and Cornelia T. Snell predict that in another five years all toilet soap bars will contain enough syndet to eliminate soap curds.

* * *

USE OF A STOOL OR CHAIR IN THE KITCHEN is not always a time and energy saver for the homemaker. Studies at the New York State College of Home Economics, Cornell University, indicate that it is probably not practical to sit while doing chores in the kitchen except for washing dishes or for such preparation jobs as peeling vegetables.

* * *

WHETHER THE INDEPENDENT SERVICEMEN or the company-authorized service center does a better job for consumers is a topic of continuing debate. One product service manager of a large appliance company explains why his company has its own service centers in strategic areas. The service problems on the company's many products provide useful information to the engineering, product planning, and marketing departments of the company, and actual experience indicates that the company's service centers will relay information back fast enough and in sufficient detail to enable the company to eliminate problems as they appear in new products. The independent serviceman has no particular interest in helping the company improve its product and therefore the special points of consumer dissatisfaction are not passed on or not in time to be useful in making changes in production.

* * *

PEARLIZED AND METALLIZED FINISHES ON LEATHERS are fashionable in jackets and cardigan sweaters. They require special handling in dry cleaning, reports the National Institute of Drycleaners. The pearlized finish particularly makes it difficult to distinguish between genuine leather and simulated leather. The latter can be wet cleaned but not dry cleaned. In some cases the pearlized finish will peel off in spots. It will be very useful if consumers will save the hang tag or label on such garments and take them to the dry cleaner in order that he may have some idea of what he is working with.

* * *

FOR PUTTING THE SUMMER HOME TO BED until next year, some excellent advice is given by the New York Pest Control Association. To begin with, all open boxes of food should either be thrown away or tightly sealed with SaranWrap. Jars with screw tops should be sealed with paraffin. Paper or plastic coverings should be removed from shelves. All traces of food should be removed from the house. Garbage containers should be well washed, and grease removed from the stove. Wherever possible, clothing, bedding, and linens should be stored in sealed containers, using masking tape to cover any cracks. Spraying with DDT around bathtubs, medicine cabinets, hampers, sinks, and window frames will discourage silverfish and cockroaches. Woolens should, of course, be well packed with a moth deterrent such as paradichlorobenzene.

* * *

AN INCREASE IN FLUORIDE RETENTION in the bones appears to be associated with the intake of vitamin C. According to studies by Professor Joseph C. Muhrer of Indiana University, reported in the Journal of the American Dental Association, test animals that received a ration of vitamin C daily along with fluoride had quantitatively more fluoride in their skeletons than similar animals receiving a like amount of fluoride but no vitamin C. The investigator suggests that the phenomenon should receive further investigation. The matter may be one of considerable importance to those whose water supply systems are being fluoridated.

(The continuation of this section is on page 35)

Consumer Bulletin

THE ORIGINAL CONSUMER INFORMATION MAGAZINE

Consumers' Research is a non-profit institution. It is organized and operated as a scientific, technical, and educational service for consumers. The organization has no support from business or industry. Its funds come solely from the ultimate consumers who read Consumers' Research Bulletin.

Scientific and technical staff, editors, and associates: F. J. Schlink, R. Joyce, D. C. Aten, M. C. Phillips, Erma A. Hinck, F. X. Hinck, Donald M. Berk, and A. R. Greenlaaf. Editorial Assistants: Mary F. Roberts, B. Beam, and Ellen J. Snyder. Business Manager: C. D. Cornish.

Consumer Bulletin is issued monthly by Consumers' Research, Inc., at Washington, N.J. Copyright, 1958, by Consumers' Research, Inc., Washington, N.J.; all rights reserved. Subscription price (12 issues), \$5 per year, U.S.A. (Canada and foreign, \$5.20). For libraries, schools, and colleges, a special subscription of nine monthly Bulletins (October-June, inclusive) is available at \$3; Canada and foreign, \$3.20.

When asking for a change of address, the subscriber should give the old address as well as the new one. Be sure to include a postal zone number if your city has been zoned. Allow five weeks for the change to become effective.

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Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3 at the end of a listing indicates relative price, 1 being low, 3 high. Where the 1, 2, 3 price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

Entered as second-class matter, November 9, 1934, at the Post Office at Washington, N. J., under the Act of March 3, 1879; additional entry at Easton, Pa. Printed in U.S.A.

VOL. 41, NO. 10

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Ambi Silette



Mamiya Magazine 35



Olympus SII

35 mm. cameras

OF MUCH INTEREST among amateur photographers nowadays is the question of the most desirable focal length for lenses of 35 mm. miniature cameras. Long-focus lenses bring a distant view nearer; when the focus is very long, the lenses are called telephoto. Such lenses are indispensable for news and sports photographers, military photographers, and other specialists taking outdoor pictures. Short-focus lenses are used for pictures with a wide scope of near objects.

The *Minolta Autowide*, one of the cameras included in the group of seven reported on in this BULLETIN, is unusual in that it is equipped with a non-interchangeable wide-angle lens (35 mm. focal length). Thus a special type of lens that is usually looked upon as an accessory to be employed under relatively unusual circumstances is the regular lens used with the camera.

The typical or normal focal length for lenses of 35 mm. cameras is about 50 mm. Such lenses cover a field of view of about 46 degrees. This is about the same viewing angle as that of the human eye, and the pictures produced with such a lens are of satisfactory appearance even when the objects photographed are close to the camera.

Lenses are called wide-angle when the focal length is less than the diagonal of the negatives. A wide-angle lens of 35 mm. focal length for use on a 35 mm. camera covers a field of view of about 64 degrees. With such a lens there will be some distortion at the sides, top, and bottom of the picture; this is not due to a defect of the lens, but is distortion caused by the unusual perspective. Thus, three-dimensional objects at the edge of the field when recorded in two dimensions appear to be wider than similar objects in the center of the field. A further disadvantage of wide-angle lenses is the reduced illumination at the edges of the field.

The chief advantages of wide-angle lenses, of course, are: first, that they give a wider field of view, which is very important for some types of

pictures, for example, which require a camera position fairly close to the subject, usually a building hemmed in by other structures, or the interior of a room; and second, a considerably greater depth of field than normal lenses. This greater depth permits elimination of the coupled range-finder in some cameras. Wide-angle lenses have their field of use, particularly for professionals and expert amateurs, but it is the opinion of Consumers' Research that it is not wise for most amateurs to purchase a camera which can be used only with a wide-angle lens, such as, for example, the *Minolta Autowide*, unless the camera is to be one of several owned by the purchaser.

A. Recommended

Ambi Silette (Agfa Camera Werk, West Germany) \$129. Case, \$14. Provision for interchanging of lenses (special mount). A 35 mm. f/4 wide-angle lens at \$69 and a 90 mm. f/4 telephoto lens at \$79 are available. The regular lens is an *Agfa Color-Solinar f/2.8* coated lens of 50 mm. focal length. *Synchro-Compur* shutter with rated speeds of 1/500 to 1 sec. and bulb. M-X synchronization. Delayed-action release (self-timer). Click stops on aperture control and on shutter speeds. A shoe is provided for attachment of flash gun or exposure meter. Coupled range-finder of superimposed-image type with single window for view-finder and range-finder (a desirable arrangement). View-finder, corrected for parallax, had luminous frames for 35, 50, and 90 mm. lenses; each frame could be brought into view by sliding a button on the top of the camera. The camera had an indicator which could be set to show the type and speed of film with which the camera was loaded. The camera is focused from 3.5 ft. to infinity by turning a knurled ring on lens mount. The film is advanced and the shutter cocked by a single stroke of a lever. Quality of regular 50 mm. lens, very good (one of the best so far tested by Consumers' Research); resolved 56 to 68 lines per mm. at center, 56 lines per mm. at edges, at full aperture. Shutter speeds were within permitted tolerances. Instruction book furnished was in German. Judged a very good, well-made camera, with about all the features which could be desired, at a price that is



Argus C-3 match-matic



Minolta Autowide



Pony IV

relatively low for a camera offering interchangeability of lenses. Weight, 1 lb. 9 oz.

Mamiya Magazine 35 (Mamiya Camera Co., 251 Fourth Ave., New York 10) \$89.95 including case. Extra magazine, \$27.50. Made in Japan. *Mamiya-Sekor f/2.8* lens of 50 mm. focal length. *Seikosha MXL* shutter with rated speeds of 1/400 to 1 sec. and bulb. M-F-X synchronization. Light-value scale (LVS) coupled to aperture and shutter-speed settings. Click stops on aperture control and shutter speeds. A shoe is provided for attachment of flash gun or other accessory. Coupled range-finder of superimposed type with single window for view-finder and range-finder (desirable). The view-finder had a luminous white frame which outlined the picture area and was also corrected for parallax (a very good feature). Had an indicator to show type of film and ASA rating of film in magazine. Camera focuses from 3 ft. to infinity by a knob which moves the lens mount. The film is advanced and shutter cocked by single stroke of a lever. The quality of the lens was good; it resolved 56 lines per mm. at center, 40 lines per mm. at edges at full aperture. Shutter speeds were within permitted tolerances, except at 1/500 which gave an actual speed of slightly above 1/350 sec. This camera had a feature which makes it especially useful for one who wishes to take black-and-white pictures and color pictures at will, with the same camera. One magazine can be loaded with color film and the other with black and white. Either magazine can be quickly applied without losing any exposures. However, this feature is achieved at rather a high price since one could buy two *Minolta A's* for a little less than the price of one *Mamiya 35* with its extra magazine. (There are a number of reasons why two cameras would be more desirable than one.) The extra weight of the two cameras would be only 3 oz. (6%). Weight with case, 2 lb. 4 oz. Extra magazine, 17 oz.

Minolta Super A (Distributed by F.R. Corp., 951 Brook Ave., New York 51) \$149.50 with *Super Rokkor f/1.8* 6-element lens of 50 mm. focal length, \$129.50 with *Super Rokkor f/2.0* 7-element lens of 50 mm. focal length. Case, \$12. Exposure meter, \$18.50. Exposure meter booster, \$5.50. Made in Japan. Provision for interchanging of lenses, with bayonet-type mounts. In addition to lenses mentioned above, other available lenses are *Rokkor 50 mm. f/2.8 5-element*, *Rokkor 85 mm f/2.8 5-element*, *Rokkor telephoto 100 mm. f/3.8 5-element*, and *Rokkor wide-angle 35 mm. f/3.5 4-element*. Behind-

the-lens *Seikosha* shutter with rated speeds of 1/400 to 1 sec. and bulb. M-X synchronization. Click stops. A shoe is provided for attachment of an exposure meter or flash gun. The meter is coupled, when desired, to the shutter speed dial. After a dial on the meter has been set to the ASA speed of the film being used, the shutter speed chosen for the picture is set by turning a second knob on the meter. This action brings into view a scale of f stops. The aperture must then be set manually to the f stop to which the needle of the meter points. The *Super A* has the desirable feature that the exposure meter can be removed and the camera operated in the usual way without it. This is particularly advantageous in case the exposure meter should have to be sent away for repairs. Coupled range-finder of superimposed-image type with single window for view-finder and range-finder. View-finder, not corrected for parallax, had a luminous white frame which outlined the picture area for 50 mm. lenses (the full frame of the finder is used for 35 mm. lenses). The camera had an indicator which could be set to show the type of film with which the camera was loaded, and its ASA rating. Camera is focused from 3.5 ft. to infinity by a knob which moves the lens mount. The film is advanced and shutter cocked by a single stroke of lever. A red warning signal on front of camera shows when shutter is cocked. Depth-of-field scales for 35 mm., 85 mm., and 100 mm. lenses located on back of camera. The quality of both the *f/1.8* and the *f/2* lens was good. Both resolved 56 lines per mm. at center, 40 lines per mm. at edges at full aperture. The coupled range-finder was slightly inaccurate at 3.5 ft. and 5 ft. The error, however, would be of importance only for pictures taken at full aperture. Shutter speeds were within permitted tolerances except at 1/400 sec. which was actually about 1/300 sec. Judged a good, well-made camera for those who desire to be able to use lenses of different focal lengths and find the coupled-range-finder miniature camera, as many do, preferable to a single-lens reflex. This camera has every feature and convenience anyone could desire, at a relatively low price for a camera of such versatility. Weight, 1 lb. 13 oz. Light meter, 5 oz. additional.

Olympus, Model SII (Distributed by Scopus Photographic Co., Inc., 404 Fourth Ave., New York 16) \$79.95. Case, \$10. Made in Japan. *Olympus E Zuiko f/2.8* 5-element coated lens of 48 mm. focal length. *Seikosha MXL* shutter with rated speeds of 1/500 to 1 sec. and bulb. X-F-M synchronization. Light-value

scale (LVS), but shutter speeds and apertures could be set independently. Click stops on aperture control and on shutter speeds. A shoe is provided for attachment of flash gun or other accessory. Coupled range-finder of superimposed type, with single window for view-finder and range-finder (desirable). The view-finder had a luminous yellow frame which outlined the picture area and was corrected for parallax (a useful feature). Had exposure guide on back of camera (judged to be of doubtful value). Camera focuses from 2.7 ft. to infinity by a knob which moves the lens mount axially. The film is advanced and shutter cocked by a single stroke of a lever. Exposure numbers are in clear view on top of camera; dial is automatically reset to zero when camera back is opened. Red dot shows on lens mount when shutter is cocked. Quality of lens, good. Resolved 56 lines per mm. at center, 28 to 40 lines per mm. at edges at full aperture. Shutter speeds were within permissible tolerances. A well-made and well-finished camera, but judged not to be as good value for the money as the *Minolta A-2* (see February '58 Bulletin). Weight with case, 1 lb. 14½ oz.

B. Intermediate

Argus C-3 match-matic (Argus Cameras, Ann Arbor, Mich.) \$75 including light meter, flash gun, and camera case. Provision for interchanging lenses (wide-angle and telephoto lens available). *Argus Cintar Anastigmat f/3.5* coated lens; shutter marked with lens openings of 3½ to 8 which correspond to apertures of f/3.5 to f/16, and shutter speeds of 4, 5, 6, 7, and 8 corresponding to shutter speeds of 1/10, 1/30, 1/60, 1/125, 1/300; there is also a setting for bulb. A photoelectric exposure meter (made in Japan) is provided which fits in shoe on the top of the camera. This, not coupled to the camera, reads directly in lens and shutter numbers as mentioned. X synchronization. No provision for preventing double exposures. Camera focuses from 3 ft. to infinity, by turning a knob which is geared to the lens mount. Coupled range-finder of split-image type with separate window for view-finder and range-finder (a relatively undesirable arrangement). View-finder not corrected for parallax. Film is advanced by turning a knob. Shutter is cocked by a lever. Camera had sturdy plastic body. Quality of lens, only fair; resolved 56 lines per mm. at center but resolution fell off considerably at edges at full aperture. Shutter speeds were within permitted tolerances. Camera was somewhat bulky and lacked the fine finish of some correspondingly priced imported cameras. Weight with meter, 1 lb. 13 oz.

Minolta Autowide (Distributed by F.R. Corp.) \$89.50 with *Rokkor f/2.8* lens of 35 mm. focal length. Case, extra. Made in Japan. Lens focuses from 2.6 ft. to infinity by turning knurled ring on lens mount. Because of the greater than usual depth of field, with the short-focus lens, the camera is not equipped with a range-finder, but three click stops are provided to facilitate focusing—"P" for portraits, "G" for group pictures, and "S" for scenes. More precise focusing can be obtained if desired by using the linear distance scale. *Optuper* shutter with rated speeds of 1/500, 1/250, 1/125, 1/60, 1/30, 1/15, 1/8, 1/4, 1/2, 1, and B. M-X synchronization and built-in self timer. Built-in (not detachable) ex-

posure meter designed for reflected and incident light, coupled to f stops and shutter speeds. View-finder has luminous frame, and is corrected for parallax. Film is advanced and the shutter cocked by a single stroke of a lever. A shoe is provided for attaching a flash gun. Quality of lens, fairly good. Resolved 68 to 80 lines per mm. at center, 28 to 40 lines per mm. at edges at full aperture (a fully satisfactory lens of 35 mm. focal length should resolve about 75 lines per mm. over the whole field). Shutter speeds well within permitted tolerances except at 1/8 and 1/125 which were approximately 30 and 35% fast, respectively. Coupled exposure meter was judged somewhat complicated in operation. Quality of camera and workmanship, good.

Pony IV (Eastman Kodak Co., Rochester, N.Y.) \$39.95. Case, \$9.25. *Kodak Anastar f/3.5* coated lens of 44 mm. focal length. *Kodak Flash 250* shutter with rated speeds of 1/30, 1/60, 1/125, 1/250 sec., and bulb. X synchronization (M synchronization at 1/30 sec. only). Shutter also had exposure value numbers 8½ to 17 and exposure cards fitting a recessed frame on the back of the camera were provided for seven different types of film. The cards give the exposure values for various light conditions of daylight on one side and lighting and distance for flash on the other. Click stops on aperture control and on shutter speeds. A shoe is provided for attachment of a range-finder (non-coupled) or other accessory. (Only *Kodak* flash guns can be used with this camera.) Camera focuses from 2.5 ft. to infinity by rotating front lens element. Film is advanced by turning a knob, shutter is cocked by setting a lever. Optical-type view-finder, not corrected for parallax. Double-exposure prevention, but double exposure can be made if desired. Main body of camera is of plastic. Shutter not well protected against entrance of dust. Quality of lens, fair; resolved 34 to 40 lines per mm. at center, 28 to 40 lines per mm. at edges at full aperture. Shutter speeds were within permitted tolerances. The camera was judged to be somewhat high priced, considering lack of coupled range-finder, limited shutter speeds, and plastic body, compared to several very good and yet economical imported cameras. Weight, 13 oz.

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The following is a list of other 35 mm. cameras that have been rated *A. Recommended* in past tests by Consumers' Research, within about the last 3 years.

Low-priced 35 mm.

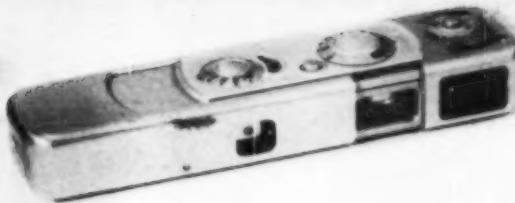
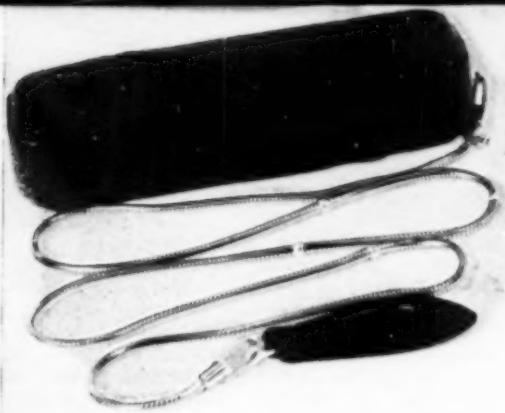
AnSCO Memar, \$41.50; *Minolta A*, \$49.95 (a very good buy); *Vito B*, \$54.50; *Vito IIA*, \$54.50.

Medium-priced 35 mm.

Aires 35-IIIL, \$99.50; *AnSCO Super Memar*, \$124.50; *Argus C-44*, \$117 with case and flash unit; *Konica III MXL*, \$124.75; *Minolta A-2*, \$69.95.

Higher-priced 35 mm.

Canon IV S2, \$284; *Canon L-1*, \$259; *Canon V*, \$325; *Canon VT DeLuxe*, \$277; *Contax IIA*, \$298; *Contax IIIA*, \$328; *Leica IIF*, \$178.50; *Leica IIIF*, \$336; *Leica M3*, \$456; *Nikon SP*, \$415; *Nikon S-2*, \$299.50.



Minox B

Sub-miniature cameras

THERE HAS BEEN a surprising interest shown recently in the tiny cameras known as sub-minatures, which take pictures on a negative about 10 x 14 millimeters (13/16 x 9/16 inches), which has an area of about one sixth that of a picture taken on the popular 35 mm. film. Most of the sub-miniature cameras use the regular 16 mm. negative motion picture film. Popular and useful for their purposes among spies, these cameras, so small in size and weight that they can be carried on the person at all times without inconvenience, have a place even among those who are not interested in ferreting out military and other secrets.

The small size and weight of these cameras, while advantageous in some respects, introduce important limitations. A camera with so small a mass is very difficult to hold steady and the blurring of pictures due to camera movement is more common than with heavier cameras. The sub-miniature cameras tested weighed about 3 to 8 ounces each as compared to about 20 ounces for a typical 35 mm. camera. Grain in the finished enlargement is, of course, a major problem, particularly when fast film is used, even when enlargements do not exceed 8 x 10 inches. For the best results of which the tiny cameras are capable, slow speed film should be used, even though its use limits picture taking to scenes which are fairly well lighted. Some makes of these tiny cameras have lenses with fixed focus, a fairly practical arrangement because of the great depth of field afforded by lenses of short focal length.

Many of the sub-miniature cameras are beautifully made, with fine workmanship, and one, the *Minox*, even has shutter speeds to 1/1000 second and a built-in exposure meter. Prices vary from a low of \$22 to \$300 for the most expensive. Consumers' Research, in testing four sub-miniature cameras, has taken hundreds of pictures under various light and other conditions. Our general

conclusion is that black-and-white prints made from negatives taken with the best of these cameras might be acceptable to users not familiar with pictures of fine definition taken by first-class lenses on cameras of much larger size. Even though the pictures were markedly inferior to those produced by fairly good 35mm. cameras, the best of the small cameras are good enough to be of interest to a considerable number of amateurs. None of the cameras tested, in the opinion of Consumers' Research, produced color slides of acceptable quality. The very small transparencies call for use of a special projector with a lens of short focal length in order to obtain a picture of satisfactory size with a normal distance between projector and screen.

To sum up, Consumers' Research does not recommend the purchase of any sub-miniature camera unless the purchaser can easily afford the expenditure for camera and prints, has special use for the features of great portability and convenience which such tiny cameras offer, and is not concerned whether the pictures he takes are of as good quality as could be achieved with almost any 35 mm. camera. The small size of sub-miniature cameras does not imply that they are cheap to use by comparison, for example, with 35 mm. cameras. The cost for a single black-and-white



Mamiya 16 Super



Golden Ricoh "16"

print, including the negative, ranged from 17½ cents to 20 cents. For comparison, note that a black-and-white print from a 35 mm. negative enlarged to the same size (3 x 4 inches) would cost about 10 cents. Color transparencies taken with the sub-miniature cameras ranged in cost from 12½ cents to 23 cents each, compared to 17 cents for 35 mm. color slides.

A. Recommended
(qualified recommendations, see text)

Minolta 16 (Distributed by F.R. Corp., 951 Brook Ave., New York 51) \$39.95 with case and two removable auxiliary close-up lenses. Made in Japan. *Rokkor f/3.5* lens of 25 mm. focal length. Fixed focus, shutter in front of lens; rated speeds, 1/25, 1/50, and 1/200 sec. Synchronized for flash (1/25 or 1/50 for F bulbs, 1/25 for M or X, and at all speeds for electronic flash). Optical view-finder, not corrected for parallax. The film is advanced and shutter cocked by pulling the camera open as one extends a telescope. This movement brings the lens and view-finder into taking position. After the picture is taken, the camera must be closed and then pulled out again for the next exposure. This method of operation prevents double exposure, but has the disadvantage that unless a picture is taken when the camera is opened up it cannot be closed again without wasting an exposure. Negative size, 10 x 13 mm. Quality of lens, fairly good. Black-and-white pictures were somewhat grainy, and transparencies taken on *Kodachrome* film were poor. 20-exposure rolls in magazine of *Tri-X* or *Panatomic X* are \$1.10. Developing and printing by F.R. Minolta 16 Processing Laboratories (3 x 4 in. prints), \$2.50. Cost per print, 18c. The quality of their work was good. *Anscochrome* or *Kodachrome* is \$1.35 per roll, processing and mounting \$1.50, or 14½c per slide. Weight with case, about 6 oz. Approximate size closed, 1½ x 3 x 1 in. Picture of this camera appears on the front cover. 1

Minox, Model B (Distributed by Kling Photo Corp., 257 Fourth Ave., New York 10) \$169.95 in chrome finish, \$186.95 in black finish. Prices include leather case and chain. Made in Germany. *Minox-Complan f/3.5* 4-element lens of 15 mm. focal length. Focuses from 8 in. to infinity by turning a small dial. Shutter had rated speeds of 1/1000 to 1/2 sec., T, and B. Built-in "X" synchronization. The lens opening on this camera is not adjustable; all pictures are taken at f/3.5. Built-in green and neutral density filters. (The latter

permits using fast film for pictures outdoors in bright light.) When the neutral filter is slid into place, the exposure meter range is adjusted automatically to suit the reduced light transmission. Optical view-finder with luminous frame outline, corrected for parallax. Built-in exposure meter, coupled to shutter speeds. The meter is set for the ASA number of the film being used. It is then pointed at the scene and a small button in the meter dial is depressed; when this button is released, the meter pointer giving the reading is locked in position. Turning the exposure dial until a small triangle coincides with the pointer sets the camera for the correct exposure. The film is advanced and shutter cocked by pulling the camera open; this motion brings the lens and view-finder into taking position. As with the *Minolta 16*, the camera cannot now be closed, unless a picture is taken, without wasting an exposure. The safety chain has small beads at 8, 10, 12, 18, and 24 in. for accurate measurement in taking extreme close-ups. Size of negative, 8 x 11 mm. Quality of lens, fairly good. Quality of developing and printing by Minox Processing Laboratories, very good. Prints were on cream-tinted paper, which some may not find desirable. Uses special 9 mm. film. Quality and workmanship of camera as a mechanism were outstandingly good. 50-exposure rolls of black-and-white film are \$1.25. Developing and printing (2½ x 3¾ in.), \$8.50. Total cost per black-and-white print, 19½c. Color film (36-exposure *Anscochrome*) is \$1.95 per roll, processing and mounting \$6.40, or about 23c per slide. Weight of camera, about 3½ oz.; case and chain, 1½ oz. Approximate size closed, 4 x 1½ x ¾ in. 3

B. Intermediate

Golden Ricoh "16" (Riken Optical Industries, 521 Fifth Ave., New York 17) \$39.50 including yellow filter and camera case. Made in Japan. *Riken Ricoh f/3.5* lens of 25 mm. focal length. Fixed focus. Shutter had rated speeds of 1/50, 1/100, 1/200, and bulb. "X" synchronization. Optical view-finder; there is a luminous frame that encloses the field of a 40 mm. telephoto lens. Film is advanced and the shutter cocked by a single stroke of a lever. Negative size, 10 x 14 mm. Quality of lens, only fair. Quality of developing and printing by Ricoh Processing Laboratories was poor. Some negatives were scratched and some were not free from lint, etc., when printed. 20-exposure rolls in magazine of black-and-white film ASA 100 are \$1. Developing and printing (2½ x 3¾ in. prints), \$2.50. Cost per print, 17.5c. *Kodachrome* 16 mm. film to fit this camera

is \$1 per roll plus \$1.50 for processing and mounting, or 12½¢ per slide. Weight with case, 8½ oz. Size, 3¼ x 2¼ x 2 in. 1

Mamiya 16 Super (Distributed by Caprod Ltd., 251 Fourth Ave., New York 10) \$39.95 including case; \$49.50 with case and kit including flash gun, three rolls of black-and-white film, six flash bulbs. Made in Japan. f/3.5 anastigmat lens of 25 mm. focal length. Focuses from 1 ft. to infinity by sliding pointer on scale marked 1, 1.5, 3, 6 ft., and infinity. Shutter had rated speeds of 1/200 to 1/2 sec. and bulb. Built-in "M" synchronization. Flash connection is in tripod socket (undesirable) and accepts only the *Mamiya* flash gun. Adjustable stops down to f/11. Built-in yellow filter. Sports-type frame view-finder, corrected for parallax. The film is

advanced and the shutter cocked by turning a toothed wheel. With the view-finder in the closed position, the lens is covered and the shutter release button is automatically locked. Negative size, 10 x 14 mm. Quality of lens, fair. Quality of developing black-and-white by the *Mamiya* 16 Processing Service was only fair. Some negatives were scratched and prints were not squared in relation to the negatives. Color slides were poorly mounted. Quality and workmanship of camera as a mechanism were good. 20-exposure rolls of black-and-white film are \$1 per roll. Developing and printing (3 x 4 in. prints), \$3. Total cost per print, 20c. 16 mm. color film (*Kodachrome Daylight*) is \$2.50 per 20-exposure roll plus \$1.50 for processing and mounting, or 20c per slide. Approximate size closed, 1¾ x 2¾ x 1¼ in. Weight with case, 7 oz. 1

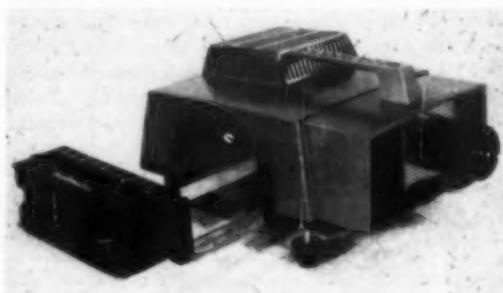
Slide projectors

Semiautomatic

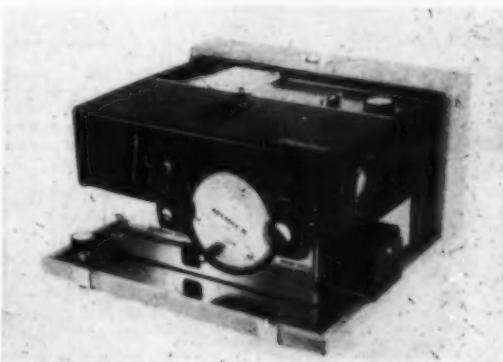
A. Recommended

Realist 400 (Realist, Inc., Milwaukee 5) \$29.95. Extra magazines, 6 for \$5.95. Case, \$9.95. Similar model with manual changer, \$22.95. Lens f/3.5, 3-element, of 4-in. focal length focused by sliding the lens mount in its tube (not conducive to close focusing adjustments). 150-watt lamp. Double condenser and heat filter. A shutter behind the lens closes automatically while slides are being changed. The number of the slide being shown appears in an opening on the top of the projector. Slide tray advances automatically as the slide changer handle is pulled out. To review a slide that has previously been shown, the slide changer handle is pulled all the way out and the slide tray moved until the number of the slide desired appears in the window. The projector had two adjustable feet for tilt and leveling. There was no on-off switch. The light output was somewhat low for a 150-watt projector. Evenness of illumination was very good. Quality of lens, fairly good. Temperature of slide, 160° (satisfactory). This projector will accept only 35 mm. slides and "Super Slides" in cardboard mounts. (Slides in metal or glass mounts are too thick to fit the magazines.) The slide changer operated satisfactorily. Because of the relatively low light output, the projector should be operated in a darkened room at a distance of not more than 10 ft. from the screen. Under these conditions, it produced a satisfactory image, and in view of its unusually low price it would, we believe, adequately fill the needs of many who take color transparencies. Weight 4 lb. 14 oz.

\$4.75 per pair; No. 2 holds 30 glass, metal, plastic, or cardboard slides, \$4.50 per pair. Lens f/2.8, *Kodak Ektanon* of 5-in. focal length focused by turning a knob. 500-watt lamp which can be turned down to 300 watts by a switch if desired, for longer lamp life. Triple condenser. For projecting 1½ x 1½ in. "Super Slides," rear condenser lens must be replaced with an accessory



Realist 400



Kodak Cavalcade Projector 500

Automatic

B. Intermediate

Kodak Cavalcade Projector, Model 500 (Eastman Kodak Co., Rochester 4, N.Y.) \$149.50 with case, remote control cord, and one slide tray. Additional slide trays: No. 1 type holds 40 cardboard-mounted slides.

condenser, available at \$4.50. A shutter closes automatically while slides are being changed. Slides are pre-heated in their tray within the projector casing before they are shown, to prevent "popping" out of focus (see *CONSUMER BULLETIN*, August 1958). The switch is arranged so that the lamp cannot be turned on unless the fan is operating (a desirable feature). Projector can be operated automatically to show slides at intervals of 4, 8, or 16 sec. Semiautomatic operation is by pressing a knob on the projector or a button on the remote control cord; manual operation is by turning a large wheel on the side of the projector. Single slides can be shown without having to place them in a slide tray. An indexing knob permits bringing any specific slide into position for showing. Had built-in pointer (not well focused) for operator to point out special items of interest in the

slide being shown. Projector had both elevating and leveling devices (good). Light output when set for 300 or 500 watts, very good. Evenness of illumination, good. Resolution of lens, only fair. Resolved 56 lines per mm. at center, 20 to 28 lines per mm. at the edges. When center of test image was in focus, it was necessary to bring the screen about 12 in. closer to the projector to make the corners sharp, a rather remarkable degree of curvature of the image field. Temperature of slide, 152° (satisfactory). Changing mechanism worked well. The projector was well baffled against light leaks. An excellent projector in all respects except quality of lens. If equipped with a first-rate lens having a reasonably flat field, the *Cavalcade* would be judged easily the best automatic projector tested to date. Weight, 19 lb. 3 oz.

Exposure meters for the amateur photographer

Consumers' Research has pointed out in previous BULLETINS, that an exposure meter is not in any sense essential with black-and-white film. Meters have their usefulness for work in unfamiliar light or pictures indoors and especially pictures taken with color film.

Under most normal outdoor light conditions, the experienced amateur can estimate exposures with the aid of the instruction sheet that comes with the film, and millions of them do with entirely satisfactory results. It is under abnormal light conditions that the exposure meter affords the best usefulness. It takes some knowledge and care to use a meter correctly, and the amateur must not expect it to perform miracles or invariably turn up the correct exposure. At best, it furnishes an approximation to the right exposure

and still requires the use of a considerable amount of common sense on the part of the user.

Color film does not have the wide leeway (latitude) possessed by black-and-white film. On that account, a degree of approximation good enough with black-and-white may not suffice with color photography. With the latter, the exposure meter reading, even though that, too, may only be an estimate, will be pretty likely closer to being correct than the average amateur can estimate with his table or chart.

Consumers' Research does not recommend purchasing a camera with a light meter built in unless the meter is easily removable for repairs. For those who want a meter right on the camera, a clip-on type such as the *Etalon Compact* will be found convenient and practical, and a good deal



Figure 1—With the Weston DR, the f/stops were read directly on the meter face. For shutter speeds other than 1/50 second, the user must use the table printed below the meter face.



Figure 2—The Walz had the conventional sort of computer dial and had a wide range of exposure selections.

less expensive than a typical meter that comes built into the camera itself.

For those who need the utmost in range and sensitivity, the *Weston Master III* and the *General Electric PR-3*, both costing over \$30 list, can be recommended. For the benefit of others who have noticed the numerous meters advertised at low prices up to \$15 or so, and wonder whether such a low-cost meter can do the job, CR has selected and tested six low-cost meters.

The meters were examined, and used for actual picture-making. They were used to measure reflected light only, as most amateurs will use this type of light measurement. Their readings were also compared to that on a newly calibrated *Weston Master III* meter under a variety of light conditions. It was found that all but the *Actino* gave exposure figures under medium and bright light conditions that were accurate enough to meet all normal requirements. Under dim light (*Kodachrome* film ASA 10 at 1/50 second on the *Weston III*), the *GE* and *Weston DR* would not produce enough pointer movement to get a usable reading.

The *Weston DR* and the *GE Mascot* were direct reading, in that the meter pointer directly showed the *f* stop (aperture) without need to operate a calculator. The *Weston* reads *f* stops directly, for shutter speeds of 1/50 second, and has a table of *f*-stop values on its body for speeds of 1/10 to 1/200. When a speed outside this range must be used, the corresponding *f*-stop value must be determined from a table in the instruction book. This was considered inconvenient and unduly complicated. Some meters had provisions for LVS (light value system) numbers, numbers for use with the *Polaroid* cameras, motion picture camera readings, as well as standard *f* stops and shutter speeds. Some had only one or two of these sets of figures, as noted in the listings. All but the *GE* and *Actino* had an adjustment for resetting the meter to zero, which is desirable.

We do not recommend used photoelectric meters unless sold on a 10-day full-money-back basis.

The first price given in the listings is the regular retail list price, and the second price, in parentheses, is that at which the meters were purchased at department stores, discount houses, and cut-rate camera stores.

A. Recommended

Votar, Model VII (Distributed by Voss Photo Corp., 601 W. 156 St., New York 32) \$7.95 including leather case and neck cord (\$3.99). Made in Japan. ASA film speeds, 0.8 to 800; shutter speeds, 1/1000 to 15 sec.; *f* stops, *f*/1 to *f*/45. Has light value scale 1 to 18, and movie f.p.s. (frames per second) settings of 16, 24, and 64. Light reading shown on the meter is placed opposite

ASA film index on dial and a scale gives a selection of stops opposite corresponding shutter speeds. Has hinged cover "attenuator" for bright lighting conditions. Scales were fairly legible and meter was convenient to use. 1

Etalon Compact (Distributed by Photographic Import & Dist. Corp., Valley Stream, N.Y.) \$9.95 with leather case (\$5.95). Made in Japan. ASA film speeds, 3 to 6400; shutter speeds, 1/1000 to 10 sec.; *f* stops, *f*/1 to *f*/45. Has LVS numbers 3 to 18. Movie camera frame speeds, 8, 16, 32, 64. Has hinged cover "attenuator" for bright lighting conditions. This is a very small meter with a shoe for mounting on the camera. Printing on dial was small but mostly easy to read. It would be considerably improved if the maker would provide more contrast between the needle of the meter and the background. Operation was the same as for the *Walz Coronet BII*. 2

Walz Coronet BII (Distributed by U.S. Photo Supply Co., Washington 12, D.C.) \$9.95 including leather case, chain, and incident light attachment (\$7.45). Made in Japan. ASA film speeds, 3 to 1600; shutter speeds, 1/1000 to 60 sec.; *f* stops, *f*/0.95 to *f*/32. Light value scale, 0 to 18; Polaroid scale, 1 to 10. Movie camera frame speeds, 8, 12, 16, 24, 32, 48, 64. The user turns a dial pointer until the correct mark is opposite the meter reading. This gives a selection of exposure settings in terms of shutter speeds and corresponding *f* stops. Hinged cover light attenuator over light cell for bright lighting conditions. The meter has provision for addition of a light-booster cell. Scales, except ASA speeds, were legible and the meter was convenient to use. 2

B. Intermediate

General Electric Mascot II PR-35 (General Electric Co., Lynn, Mass.) \$9.95 (\$6.99). Case, \$1.39. ASA film speeds, 10 to 400; shutter speeds, 1/1000 to 1 sec., and 16, 24, and 48 frames per second for movie cameras; *f* stops, *f*/1.9 to *f*/32. LVS numbers, 5 to 18. ASA index and shutter speed is set on computer dial. The needle of the meter then points directly to correct *f* stop. This meter would be sufficient for many amateur photographers and excellent for home movie cameras. However, its limited scales would not make it a good choice for the advanced amateur who might require more versatility, particularly with respect to low light conditions. Scales were legible except shutter speed figures, which were very hard to read. Meter would be A. Recommended if for use with a movie camera only. 2

Weston DR, Model 853 (Weston Electrical Instruments Corp., subsidiary of Daystrom Inc., Newark 12, N.J.) \$16.95 including leather case (\$8.95). ASA film index, 8 to 125; shutter speeds, 1/10 to 1/200 sec. on meter (1/5 to 1/400 in book); *f* stops that are read directly on meter are from *f*/2 to *f*/32. Other stops at *f*/1 to *f*/45, depending on shutter speed. LVS numbers, 8 to 16; Polaroid numbers, 1 to 7. ASA index is set by rotating a cover which is over the light cell. *F* stops, LVS, and Polaroid numbers are read directly for 1/50 sec. (or 1/30 or 1/50 sec. movie shutters). Other speeds (1/10 to 1/200) and *f* stops must be read on a chart on the body of the meter. For speeds not listed, one must consult a chart in the instruction book (complicated and

inconvenient). This meter would be *A. Recommended* if for use with a movie camera only. It was considered too limited in range for convenient use. **2**

C. Not Recommended

Actino A (Distributed by Spiratone, Inc., 135-06 Northern Blvd., Flushing 54, N.Y.) \$5.59, plus postage, including leather case. Made in West Germany. Film

index in European Din system, 7 to 25. Has table in case for converting to ASA 4 to 250; shutter speeds, 1/1000 to 60 sec.; f stops, f/1 to f/22. Desired stop opening is placed opposite film index. Shutter speed is then read opposite the pointer of the meter. Except for the necessity to convert film index numbers from Din to ASA, the meter was convenient to use. However, it was inaccurate in that it gave 1 or 2 stops overexposure over the whole range of light readings. **1**

Polaroid cameras

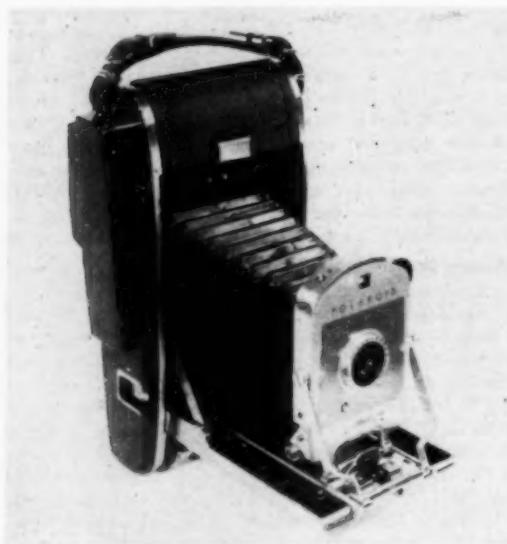
THE UNDISPUTED POPULARITY of the *Polaroid Land* cameras is due undoubtedly to the novelty of being able to obtain a finished picture in a minute after making the exposure, without need for waiting several days for the film to be processed and printed by a dealer. Sales of the *Polaroid* cameras, accessories, and film in 1957 amounted to over 48 million dollars. Certainly *Polaroid's* great popularity is not because picture taking by this method is economical, for the cost per picture is at least double that with conventional cameras. Pictures obtained with the *Polaroid* are not of superior quality or better in any way than pictures taken by conventional cameras of good quality.

Aside from speed in obtaining the finished picture, there is one practical advantage with the *Polaroid* cameras: If the exposure turns out to

have been incorrect, the exposure time and aperture used can be corrected and another picture taken quickly. Need for a retake is likely to arise fairly frequently, for the *Polaroid* film has much less latitude than conventional films, and the exposures must be correct to within about half a stop, to obtain satisfactory pictures. If three pictures out of a roll of eight need to be retaken, the cost per acceptable picture in the $3\frac{1}{4} \times 4\frac{1}{4}$ inch size rises from 25 cents to 40 cents, and 40 cents a print is a high price for a $3\frac{1}{4} \times 4\frac{1}{4}$ black-and-white picture. Copies of *Polaroid* pictures can be obtained by sending the originals to the manufacturer, who charges $12\frac{1}{2}$ cents for a $3\frac{1}{4} \times 4\frac{1}{4}$ inch print. Or if the user prefers to make his own duplicates in order to save time, he can buy a device known as a *Polaroid* print copier at \$29.95 to be used in conjunction with the camera. The copier has its own built-in copying lens, lights, and timer. To obtain a copy, the original snapshot is placed inside the copier, the camera is attached to the copier, and an exposure is made on *Polaroid* film. The extra print costs the same as the original, not including the cost of the copier; the cost is thus about twice what the manufacturer of the camera charges for reproducing originals sent him by mail.

Another device that is convenient for some *Polaroid* owners is a kit which permits making $2\frac{1}{4} \times 2\frac{1}{4}$ inch black-and-white transparencies for projection. The kit, priced at \$7.95, includes a device for adapting the camera to the smaller size, one roll of special film, eight mounts, holder, view-finder mask, light seal tape, and a "Dippit" which will harden and "fix" 48 transparencies. Once the kit has been purchased, the cost per transparency will be about 55 cents each, and of course you will need a projector made for this size of transparency. *Polaroid* offers one at \$109.75.

Polaroid cameras are very popular with ama-



Polaroid 150

teur snapshooters who do not mind paying the high cost per picture for the novelty and convenience of getting a finished print quickly; the picture-in-a-minute cameras will be very useful, too, for certain work on newspapers, for real estate firms, insurance companies, window dressing operations, advertising agencies, and photo studios.

The *A* ratings given the *Polaroid 110A* and *150* are to be regarded as qualified recommendations; the *A* rating in our judgment applies only for those users who regard the somewhat lower quality of the finished print, compared to a first-class print from a negative made by a camera of the usual type, fully compensated for by the advantages of the *Polaroid* quick development principle. A new kind of *Polaroid Land* film (identified by a star on the box) is now offered; it is advertised as being twice as sharp as previous film.

The cameras listed can often be purchased at about 25 percent discount from list prices shown.

A. Recommended

Polaroid Pathfinder, Model 110A (Polaroid Corp., Cambridge 39, Mass.) List price, \$169.50. This camera takes eight pictures, $3\frac{1}{4} \times 4\frac{1}{4}$ in., on one roll. *Rodenstock Varex* 4-element $f/4.7$ lens of 127 mm. focal length. *Prontor SVS* shutter with rated speeds of 1/300 to 1 sec., and bulb. M-X synchronization and self-timer. In addition to speeds and *f* stop markings, the shutter had a light-value scale which could be uncoupled when desired, by moving a small lever. A convenient feature is a hinged lens cap which, when closed, prevents operation of shutter. There are click stops on aperture settings and for the shutter speeds. A shoe is provided with built-in connection for flash gun. (Flash gun can also be connected at the shutter if desired.) Coupled range-finder of superimposed-image type, with separate windows for range-finder and view-finder (not desirable). View-finder is corrected for parallax. The camera is focused from 3 ft. to infinity by turning of a large plastic knob underneath the bed of the camera. The quality of the lens was fairly good; it resolved about 12 lines per mm. at center, 10 lines per mm. at edges on the print. (A good lens of this focal length should resolve about 20

lines per mm. on the negative. Shutter speeds were within permitted tolerances. Shutter release was poorly located and inconvenient to operate. Camera was noticeably large, bulky, and very heavy (weight, 4 lb. 10 oz., about twice the weight of an ordinary roll-film camera taking the same size picture). The extra weight and bulk are the prices that must be paid for the advantage of obtaining pictures of this size ($3\frac{1}{4} \times 4\frac{1}{4}$ in.) in 1 minute from the moment of exposure. The pictures produced by the *110A* camera were superior to those produced by the cheaper *Polaroid Highlander* and we believe that most users would very likely find them satisfactory. They were not, however, as sharp as pictures produced by a conventional camera with a first-class lens. Cost per picture: *PolaPan 200*, 25c; *PolaPan 400*, 27c. Copies can be had from the manufacturer, 2 for 25c, plus postage one way.

Polaroid, Model 150 (Polaroid Corp.) List price, \$109.95. Identical with *Model 110A* except for lens and shutter. Lens was a 3-element $f/8.8$ of 130 mm. focal length in shutter marked I-B (bulb). Shutter is set at I for all except time exposures; changing the light-value number changes both aperture and shutter speed. (Actual shutter speeds and apertures are not shown.) Light-value numbers from 10 to 17 appear in a small window above lens upon turning a dial. Quality of lens, fair.

B. Intermediate

Polaroid Highlander, Model 80A (Polaroid Corp.) List price, \$72.75. The camera takes eight pictures, $2\frac{5}{8} \times 3\frac{3}{8}$ in., per roll. Three-element lens of about $f/9$ maximum aperture. Shutter marked I-B (bulb). Shutter is operated like that on the *Model 150* above. Light-value numbers from 11 to 18 appear in small window above lens upon turning a dial. A shoe is provided with built-in connection for a flash gun. The view-finder was not corrected for parallax. The camera is focused from 3.5 ft. to infinity by turning front lens mount. The quality of the lens was mediocre. Shutter release was poorly located and inconvenient to operate. The pictures obtained with this camera were about of the quality one would expect to obtain by use of an inexpensive box camera in the \$6 to \$15 price range. Weight, 2 lb. 13 oz. Cost per picture: *PolaPan 200*, 18.5c. Copies, same size as original or $3\frac{1}{4} \times 4\frac{1}{4}$ in., can be had from the manufacturer, 2 for 25c, plus postage one way.

Twin-lens reflex camera

B. Intermediate

Yashica-Mat (Yashima Optical Ind. Co., Ltd., 234 Fifth Ave., New York 1) \$75.50. Case, \$10. Made in Japan. *Lumaxar* coated $f/3.5$ taking lens and *Lumaxar* coated $f/3.2$ viewing lens of 80 mm. focal length. *Copal MXV* shutter with rated speeds of 1/500 to 1 sec., and bulb. Built-in M-X synchronization. Waist-level focus-

ing on ground-glass screen with built-in magnifier. The viewing screen is not corrected for parallax. The camera also had an eye-level view-finder, but in using this one does not have access to the focusing screen. In loading film, arrows on film must be lined up with marks on camera body; thereafter film takes the correct positions automatically upon turning the crank. Turning the crank also cocks the shutter, as on the *Rolleiflex*. Cam-



Yashica-Mat

era has means for preventing double exposures. The aperture and shutter speed, which are selected by turning two small knurled wheels, appear in a window at the top of the lens mount in a manner similar to the *Rolleiflex Automat*. Focusing is from 3.3 ft. to infinity by knob at left side of the camera. This knob also contains an indicator to show the ASA number of the film with which the camera is loaded. Quality of lens, good; it resolved 48 to 56 lines per mm. at center, 28 lines per mm. at edges at full aperture. (To be satisfactory, a lens of this focal length should resolve 32 lines per mm.) Shutter speeds were within permitted tolerances except: 1 sec., 35% slow; 1/10th, 25% fast; and 1/500th which was actually 1/300th sec. Although the shutter is better protected against entrance of dirt than most Japanese cameras of this type, the shutter was not well sealed at the point where synchronization setting and self-timer levers entered shutter casing. In many respects, this camera appears to be the equivalent in functioning and usefulness of the *Rolleiflex Automat*, which sells for almost three times as much. Burleigh Brooks (the distributors) and the manufacturer have recently brought suit against Yashima charging unfair competition. Weight, 2 lb. 15 oz.

Inexpensive 8 mm. movie cameras

MOTION PICTURE CAMERAS that use 8 mm. film are estimated to account for 90 percent of the home movie market. Although 16 mm. film produces a sharper picture and can be projected to larger sizes, it is far more economical for the consumer to purchase and use 8 mm. equipment. For normal home use, the 30 x 40 inch projected picture will be a fully satisfactory size, and the pictures will be reasonably sharp when taken with a satisfactory camera. Cost is a major factor to many in choosing a movie camera. A four-minute roll of 8 mm. color film will cost about \$3.50 (including cost of processing) while 16 mm. film running for four minutes will come to about \$9.50. Cameras and projectors will be more expensive in the 16 mm. size, too; a low-priced 16 mm. camera sells at about \$120, and a low-priced 8 mm. camera at \$30.

The person who is buying an 8 mm. movie camera has a number of decisions to make, such as the choice between roll-film load and magazine load. A roll-film load will cost about 20 percent less than a magazine. The pictures generally will be sharper with the roll film. Magazines have the one advantage of fast loading, but the magazines have been known to function badly on occasion.

Among striking new developments in home movies are the cameras that include the automatic (or electric eye) diaphragm adjuster. In CR's opinion, the delicate mechanisms have

not been in use long enough to give assurance of their ability to stand up to normal use and abuse, and to be repaired easily and inexpensively if they should get out of order.

The users of the simple cameras in this report for the most part need to make only one adjustment before taking pictures. All the cameras have simple, easy-to-understand exposure guides imprinted on the camera body.

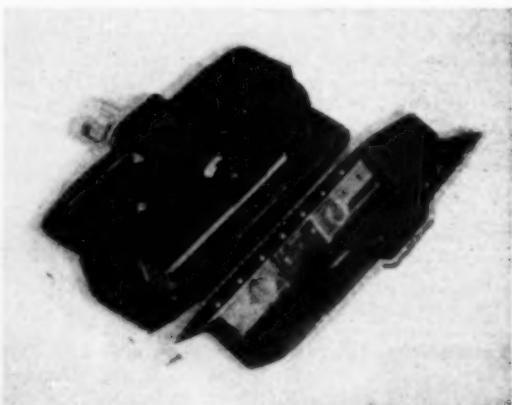
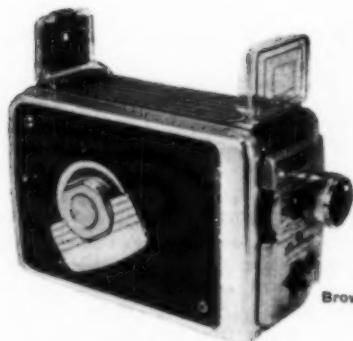


Figure 1—The Revere 50 had its film plane at the rear of the camera instead of at the front. This allowed for an unusually deep sunshade effect, which gave pictures of good contrast.



Brownie Model II



Yashica 8



DeJur Eldorado-Eight



Bell and Howell
220 Wilshire



Keystone
K-25 Capri



Eumig Electric

The cameras were tested for frame speed, lens quality, and steadiness of projected picture, as well as other aspects, including construction and ease of loading and use.

All the cameras except the *Eumig Electric* had hand-wound spring motors. The *Eumig* used an electric motor powered by four pen cell batteries (15 cents each). The batteries were found to be good for 10 rolls of film if the rolls were not exposed in fairly rapid sequence. The time of usable continuous runs on the spring-powered cameras (before the motor slowed down appreciably) varied from 18 seconds to 35 seconds.

It was found that all but the *Yashica* and *Eumig* ran faster than the normal 16 frames per second when initially wound; all were about at the correct speed when 50 percent run down, and considerably slower than normal when near the end of the full wind (80 percent run down).

Prices given are manufacturers' suggested list, but anyone who wishes to do the needed shopping will be able, in most larger cities, to buy most of the cameras at substantial discounts.

A. Recommended

Revere 50 (Revere Camera Co., 320 E. 21 St., Chicago 16) \$49.95.

Description: Size, 5 $\frac{1}{8}$ in. high x 3 $\frac{3}{4}$ in. wide x 2 $\frac{1}{4}$ in. thick. Weight, 2 lb. 1 oz. Fixed-focus f/2.8 *Cine Revar* lens of 12.7 mm. focal length. Click stops, f/2.8 to f/16. Non-interchangeable mount. Camera had a 64-frames-

per-second speed for slow motion, in addition to the usual 16 frames per second. Optical view-finder. Key winding. Motor does not stop automatically before it begins to slow down. Self-setting footage indicator showed number of feet of film used. Die-cast body with tan crackle finish.

Performance: Very easy to load. Motor runs 45 sec. on full wind (slows down at 35 sec.). Speed of film travel (frame speed), steady up to about 30 sec. Quality of lens at f/2.8 and f/8, very good. No vertical jitter (tremor) in projected pictures (best of all cameras in the group tested, in this respect). This camera is unusual in having the focal plane of the film at the rear of the body, and has a very deep sunshade, which is advantageous (see Figure 1). Color pictures were sharp and had good contrast, with no evidence of flare or reflections. 2

* * *

DeJur Eldorado-Eight (DeJur Amsco Corp., Long Island City, N.Y.) \$54.95.

Description: Size, 5 in. high x 4 $\frac{1}{2}$ in. wide x 2 $\frac{1}{4}$ in. thick. Weight, 2 lb. 1 oz. Fixed-focus f/2.3 *Elegit Chromar* lens of 13 mm. (1/2 in.) focal length. Click stops to f/22. Interchangeable lens ("D") mount. Optical view-finder for 13 mm. lens also had frame for 38 mm. (telephoto) lens. Key winding. Motor stops automatically before speed becomes too slow. Provision for single exposure. Self-setting footage indicator shows number of feet of film remaining. Die-cast body with gray crackle finish. **Performance:** Easy to load. Motor runs 36 sec. on full wind (slows down at 30 sec.). Frame speed, steady up to about 25 sec. Quality of lens at f/2.3, fair; at f/8, good. Some vertical jitter in projected pictures. 2



Figure 2—Batteries for the Eumig were loaded into a plastic cartridge which was slipped easily into a compartment in the camera.

Yashica 8 (Yashima Optical Ind. Co., Ltd., 234 Fifth Ave., New York 1) \$49.95. Made in Japan.

Description: Size, $5\frac{1}{2}$ in. high x $4\frac{3}{4}$ in. wide x $2\frac{1}{4}$ in. thick. Weight, 1 lb. 14 oz. *Cine Yashikor f/1.9* lens of 13 mm. focal length, focused from 1 ft. to infinity. Click stops to *f/16*. Interchangeable "D" mount. Optical zoom-type finder with positions for 6.5 mm., 13 mm., 25 mm., and 38 mm. lenses, and an anamorphic ("wide screen") lens (see Figure 3). Key winding. Motor stops automatically before slowing down. Die-cast body, well finished, with smooth gray and black enamel.

Performance: Very easy to load. Motor runs 33 sec. on full wind. Frame speed was steady at 16 frames per second until motor stopped automatically. Quality of lens at *f/1.9*, fair; at *f/8*, good. Slight vertical jitter in projected pictures. **2**

B. Intermediate

Bell and Howell 220 Wilshire (Bell & Howell, 7100 McCormick Rd., Chicago 45) \$39.95.

Description: Size, 6 in. high x 4 in. wide x $2\frac{3}{4}$ in. thick. Weight, 2 lb. Fixed-focus *f/2.5* *Bell & Howell Comat* lens of 10 mm. focal length. Click stops to *f/16*. Exposure dial coupled to *f* stops. Optical view-finder with colored frames for regular lens, wide-angle and telephoto supplementary lenses. Crank winding. Motor stops automatically before speed becomes too slow. Self-setting footage indicator shows number of feet of film used. Die-cast body with tan crackle finish.

Performance: Easy to load. Motor runs 46 sec. on full wind (begins to slow down after 37 sec. of running). Frame speed, good up to 30 sec. Quality of lens at *f/2.5* and *f/8*, fair. There was some vertical jitter in the projected pictures. Also there was a slight "blooming" effect or rapid change in focus noticeable due presumably to the film's not staying accurately in one plane during exposure. **1**

Brownie, Model II (Eastman Kodak Co., Rochester, N.Y.) \$29.95.

Description: Size, $4\frac{1}{8}$ in. high x $6\frac{1}{4}$ in. long x $2\frac{1}{2}$ in. thick. Weight, 1 lb. 11 oz. Fixed-focus *f/2.3* lens of 13 mm. focal length. Click stops to *f/16*. Exposure guide dial coupled to aperture adjustment. Optical view-finder (folding type) with colored framing for wide-angle and telephoto auxiliary lenses. Adjustable to correct finder for parallax. Key winding. Motor does not stop automatically before slowing down. Footage indicator which must be set manually shows number of feet of film used. Stamped metal body.

Performance: Easy to load. Motor runs 50 sec. on full wind. Initial frame speed was too fast (21 frames per second; should be 16) and at end of run speed was considerably below 16 frames per second. Maximum run should not exceed 35 sec. (which is more than sufficient for a single scene). Quality of lens at *f/2.3*, fair; at *f/8*, good. **1**

Keystone K-25 Capri (Keystone Camera Co., Inc., Boston 24) \$39.95.

Description: Size, 5 in. high x $4\frac{1}{2}$ in. wide x $2\frac{3}{4}$ in. thick. Weight, 1 lb. 11 oz. Fixed-focus *f/2.5* *Elgeet* lens of $\frac{1}{2}$ -in. focal length. *F* stops to *f/22*. Interchangeable "D" mount. Optical view-finder with frame for $1\frac{1}{2}$ -in. telephoto lens. Crank wind. Motor does not stop automatically before slowing down. Self-setting footage indicator showed number of feet of film left. Die-cast body with gray crackle finish.

Performance: Easy to load. Motor runs 24 sec. on full wind (shortest run of the cameras tested). Frame speed steady up to about 17 sec. (run considered short). Quality of lens at *f/2.5*, fair; at *f/8*, good. Slight vertical jitter in projected pictures. One of the test samples of this camera had a defective shutter release. **1**

Eumig Electric (Distributed by Unimark Photo Inc., 132 W. 31 St., New York 1) \$49.95 less batteries. Made in Austria.

Description: Size, $4\frac{1}{4}$ in. high x $4\frac{1}{2}$ in. wide x $2\frac{1}{4}$ in. thick. Weight, including batteries, 1 lb. 14 oz. Motor is powered by four pen cell batteries (15c each); battery drive is advantageous for constant speed and a long continuous run of film. Fixed-focus *f/2.7* *Eugon* lens of 12.5 mm. focal length. *F* stops to *f/22*. Non-interchangeable mount. Optical view-finder with frame for telephoto auxiliary lens. Footage indicator, which must be set manually, showed number of feet of film used. Die-cast body with gray crackle finish.

Performance: Batteries fit in a plastic case which is easily inserted in a compartment on the side of the camera (see Figure 2). Quality of lens at *f/2.7*, fair; at *f/8*, fair to good. There was some vertical jitter in the projected pictures. 10 rolls of film can be taken with one set of batteries if camera is used intermittently. CR found that $7\frac{1}{2}$ rolls could be taken in rapid succession on one set of batteries, and after a two-hour idle period an additional $1\frac{1}{2}$ rolls could be exposed. Frame speed, steady (16 frames per second). As one can easily forget how many rolls of film have been exposed over a period of time, and as dry batteries deteriorate with time and temperature, the camera would be improved by the addition of some sort of battery condition indicator. **2**

Clothes dryers—II

THE CLOTHES DRYER is perhaps the most difficult home appliance to buy. Not only must the home-maker concern herself with the dryer's quality, price, and performance, but she must also take all of the following into account before making her choice:

- a. Type of energy supply—all electric, or electricity and gas?
- b. On all-electric models—115 or 230-volt operation?
- c. Disposal of moisture from clothes—by vent pipe or water condenser?
- d. Location of dryer in home, as it affects installation?

A gas dryer requires electricity at 115 volts for operating the lights, motor, etc., and can be plugged into most any 115-volt electrical outlet that is protected by a 15-ampere fuse. The cabinet should, of course, as with all electrical appliances used in the laundry or other damp location, be grounded electrically by running a wire from the cabinet to a clamp firmly attached to a cold-water pipe or other suitable permanent ground.

Gas connections should be made only by gas company personnel or qualified plumbers, and should comply with local codes.

Gas dryers are more complex in construction and have more parts than do electric dryers. This accounts, in part, for the \$30 to \$50 higher initial price over the comparable models of electric dryers.

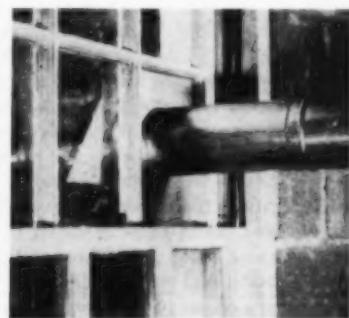
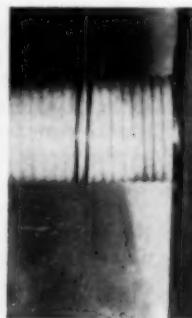
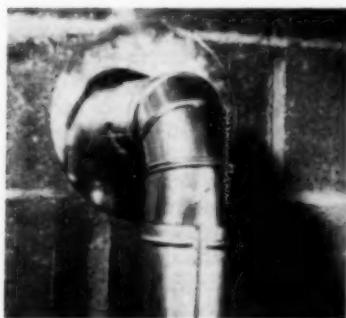
There is also the matter of servicing and how much it will cost—for an electric dryer, and for a

In the September 1958 issue of Consumer Bulletin, the advantages and limitations of both electric and gas clothes dryers were discussed, and performance data and ratings were given on 15 electric dryers. This second article completes the report on clothes dryers and presents performance data and ratings on the eight gas dryers that were tested.

gas dryer. Experience indicates that the dryer is among those home appliances requiring more than normal amount of servicing and likewise that the electric dryer requires more frequent attention than a gas dryer. The service charges, however, will be higher on gas dryers. In general, over-all repair costs for a gas dryer will likely be lower, as will be fuel costs. For a discussion of relative costs for drying a load of clothes with gas and electricity, see September 1958 issue of CONSUMER BULLETIN.

Before deciding on electricity or gas, it would be wise to get written estimates on installation charges for both types. There could be a big difference, either way, on that factor alone.

Some gas dryers come equipped—for an extra \$30 or so—with electric ignition systems, which eliminate the pilot burner problem. A standing pilot light generates heat when the dryer is not in use and, of course, consumes gas. If turned off between washes, it needs to be relighted each time



Installation charges on a dryer will often add substantially to the total price of the dryer. For example, to discharge the warm moist air, the water-condenser type dryer will require cold-water and drain connections. To install a vent-type dryer may require drilling a hole through masonry (left) or other material, properly insulated (center) or replacing a pane of glass with a sheet of metal or asbestos board to fit the space (right).

Important characteristics of three types of dryers

Gas dryer, with vent pipe for exhausting moisture	Electric dryer, with vent pipe for exhausting moisture	Electric dryer using cold water for condensing moisture
Costs \$30 to \$50 more initially than comparable electric dryer with vent pipe		Costs \$20 to \$30 more initially than comparable electric dryer with vent pipe
Must be vented to the outside	Should be vented to the outside	Must have water and drain connections
Operates on 115 volts, with natural, manufactured, or bottled gas	Operates on 115 or 230 volts	Operates on 115 or 230 volts
Dries load in about 30 minutes	Dries load in about 30 minutes on 230 volts; about 90 minutes on 115 volts	Dries load in about 45 minutes on 230 volts; about 100 minutes on 115 volts
Cost to use		
About 2½ cents per load (not including pilot light—see below)	About 6 to 7 cents per load	About 7 cents per load plus the cost of about 20 gallons of cold water

the dryer is used—a nuisance and often most inconvenient.

The amount of gas consumed by some pilot lights over a period of a year can be substantial, particularly if the pilot burner is not adjusted correctly. Gas rates do, of course, vary in different localities, but the cost for continuous operation of a gas pilot may run as high as 3 cents a day.

On the other hand, the heat generated by a pilot burner is not necessarily wasted; it may serve a worth-while purpose. During winter months, the heat given off by the pilot light makes its contribution to the heating of the basement, while in the summer it will tend to lower the relative humidity, often a desirable end, where appliances are placed in a damp location.

The location of a dryer in the home, whether it uses electricity or gas, is something one should give serious thought to before buying. Many people are so pleased with the prospect of owning a new dryer that they overlook the matter of location until the dryer is delivered, and then discover they could have avoided certain problems and expense had they chosen differently. If a water-condenser type of dryer is to be selected, it will be necessary to provide a cold-water connection, and a drain for disposing of approximately 20 gallons of water for each load dried. Check to be sure that this can be done convenient-

ly and without undue expense, and that there will be no likelihood of overloading a septic tank, or its drainage field.

A dryer intended to be vented out of doors will require a special venting kit, at extra cost—about \$15—to exhaust the warm, moist air; such an installation may require drilling through masonry, or other wall, or simply extending a pipe through a window in place of a pane of glass. Either installation will entail some expense.

The best location for a dryer is, of course, beside the washing machine. In this location the transfer of wet clothes from the washer to the dryer can be made with relative ease. Whether the dryer should be placed at the left or right side of the washer will in many instances depend on home circumstances and existing arrangements. If the dryer door is hinged at the bottom and the washer door is hinged at the bottom or is located at the top of the washer, there is no problem—the dryer can be placed on either side of the washer. If, however, the dryer door is hinged at the side, it will be most convenient to locate the dryer so that the hinges on the dryer are on the side away from the washer. This arrangement will avoid awkward movements in handling of clothes caused by having the door of the dryer open between the loading port of the dryer and that of the washer.

Anyone contemplating buying new laundry appliances or planning to rearrange her present laundry equipment will be interested in seeing a detailed discussion of the arrangement of laundry appliances, including sketches of various layouts, that has been prepared in the form of an 8-page booklet entitled "Laundry Areas—Space Requirements and Location," Circular Series C5.4. Those who wish to obtain a copy can do so by sending 15 cents to Small Homes Council, Mumford House, University of Illinois, Urbana.

As pointed out in the September 1958 CONSUMER BULLETIN, a lower drying temperature and shorter tumbling time favor longer life of clothes, and reduce wrinkling. The shorter drying time also permits prompt drying following washing when consecutive loads are washed. The least amount of wrinkling occurs when the washed load is dried for 25 to 30 minutes at a maximum temperature of about 175 degrees, followed by a 5- to 10-minute cooling-off period while tumbling continues.

All gas dryers listed in this report must be installed with a vent pipe leading to the outdoors to discharge the warm, moist air and the gases of combustion. Unless noted otherwise in the following listings, dryers had painted enamel drums.

Gas

A. Recommended

Kelvinator, Model DGH-5L (Kelvinator Div., American Motors Corp., Detroit) \$230. Lint screen assembly, somewhat difficult to replace in correct position. This dryer had a large opening for convenient loading, but the size of its drum was somewhat smaller than average. No light in drum.

Kenmore Cyclo-Fabric (Sears-Roebuck's Cat. No. 26—M8795W) \$290 with electric ignition, plus shipping. This model is basically similar in performance to the *RCA Whirlpool* dryer tested. The *Kenmore* dryer has the desirable "platform door."

Norge, Model DG-24 (Norge Sales Corp., subsidiary of Borg-Warner Corp., Merchandise Mart Plaza, Chicago) \$270. Large door opening combined with "platform door" for convenient loading and unloading.

Philco-Bendix Custom, Model DG-688 (Philco Corp., Philadelphia) \$330. Relatively noisy in operation. Door opening judged small (and glass dome of door tended to interfere with loading). Replacement of the drum light required removal of the backplate of the dryer (9 screws).

RCA Whirlpool Imperial Mark XII, Sales No. ED-96 (Whirlpool Corp., St. Joseph, Mich.) \$370 with electric ignition. Relatively noisy in operation. Replacement

Name	Model No.	Dimensions, inches			Drum vol., cu. ft.	Time to dry load, minutes	Control settings	Drying range, °F		Peak temperature, °F	Gas per load, cu. ft.	Electricity, watt-hours per load	Comments
		W	H	D				from	to				
Caloric	100	30	40	26	5.4	35	On	—	140	225	10.8	165	
Easy Riviera	DCH-G	27	42	27	4.9	30	Norm.	120	135	230	10.0	155	
						30	Fine	120	135	190	9.9	155	
Kelvinator	DGH-5L	27	42	29	4.8	25	On	120	130	175	8.9	95	
Maytag	741C	32	43	28	4.6	35	Reg.	140	150	200	10.3	170	
						35	W. & W.	140	150	200	10.3	170	
Norge	DG-24	31	43	27	5.7	30	Super Fast	—	130	155	10.9	170	
						40	Med.	—	120	155	11.3	200	
						60	Low	—	100	145	9.3	290	
Philco-Bendix	DG-688	30	43	27	5.7	20	On	—	145	180	11.7	125	
RCA Whirlpool	ED-96	29	43	26	5.0	25	Reg.	110	135	135	11.5	140	Timed
						35	Reg.	110	125	135	13.0	225	Automatic
						30	Del.	100	135	135	11.5	190	Timed
						40	Del.	100	135	135	12.5	230	Automatic
Speed Queen	132	30	41	29	4.3	30	High	130	140	195	10.5	135	
						85	Low	—	95	145	9.5	345	

Norm.—Normal; Reg.—Regular; W. & W.—Wash and Wear; Med.—Medium; Del.—Delicate.

of the drum light required removal of the backplate (13 screws). The *A-Recommended* rating applies when this dryer is set with timer controls rather than with the automatic shut-off controls (discussed on page 7 of the September 1958 CONSUMER BULLETIN).

B. Intermediate

Caloric, Model 100 (Caloric Appliance Corp., Topton, Pa.) \$287 with electric ignition. Relatively noisy in operation. Air in dryer reached temperatures in excess of 200°F.

Easy Riviera, Model DCH-6 (Easy Laundry Appliances Div., The Murray Corp. of America, Chicago) \$270. Air in dryer reached temperatures in excess of 200°F on high setting. No light in drum.

Maytag, Model 741C (The Maytag Co., Newton, Iowa) \$300. Lint filter was ineffective. Size of drum was smaller than on most other makes. Drum was finished in porcelain enamel. Air in dryer reached temperature of 200°F.

Speed Queen Deluxe, Model 132 (Speed Queen, Div. of McGraw-Edison Co., Ripon, Wis.) \$250 to \$270. Dryer equipped with "Start" button that must be depressed each time, after the timer is set, to start the dryer in operation, and the door is held shut by magnetic latches; these features are both important from the safety standpoint, particularly where there are young children in the home. Drum is made of stainless steel but was one of smallest in size of the dryers tested (only 4.3 cu. ft.). Air in dryer reached temperature of 195°F on the high setting.

Control of house mice in the home

(The beginning of this article is on page 39)

The anticoagulant poisons, including diphacin, fumarin, pival, and warfarin, are the least hazardous of the poisons, and they are effective. Small amounts of such poisons must be consumed daily for five days or more to kill. Several weeks may elapse before complete control is obtained. These poisons may be purchased as concentrates for mixing with fresh bait materials or as ready-to-

use baits. All poison baits should be protected. They can be placed behind boards placed along walls or in cigar boxes with one-inch holes made in both ends.

Another control method consists of sprinkling 50% micro-fine DDT dust* for several feet along concealed runways or blown into holes. The powder is inhaled by the mice or picked up on their feet and fur and later licked off and ingested. Two weeks may elapse before complete control is attained. DDT should not be applied near openly exposed food or in places where children or pets will come into contact with it.

Flake naphthalene or paradichlorobenzene is useful as a repellent for mice about stored products as furniture, clothing, and blankets. Sprinkle such items liberally and wrap them with paper to enclose the fumes. Do not use either of them about foodstuffs, and do not use them in circumstances where the fumes will be inhaled by persons living in the house.

For more details, send for free Wildlife Leaflet 349 to the Fish and Wildlife Service, U. S. Department of the Interior, Washington 25, D.C., or its District offices.

* * *

Consumers' Research gratefully acknowledges the generous assistance of the Fish and Wildlife Service of the United States Department of the Interior which provided the information in this article and its illustrations, and especially to Ernest M. Mills, Assistant District Agent, Region 5, of the Service.



G. C. Oderkirk, Fish and Wildlife Service

Poisoned bait in station. Cut small holes in each end of a box and place a small amount of bait in the bottom.

*Hardware and garden supply stores may carry only the regular grade. The micro-fine powder, which is more efficient, may be obtainable from some pest control operators or exterminators.

Combination storm windows

(The beginning of this article is on page 2)

rived, the screens would be removed and the storm windows installed. In the spring the reverse operation was required. At all times the unused items—storm windows or screens, according to the season—required storage space, usually in the basement or garage.

Combination storm windows and screens are now very popular; they are designed to eliminate or make easier this semi-annual chore by providing in a single unit, a window that can be used for the two purposes interchangeably. The simplest such device is a panel-type window, often sold as an "economy" model. It consists of a fixed frame with removable half-size panels—two glass and one screen. Seasonal changes require removal of one glass panel and substitution of the screen, or vice versa; the unit that is not needed is then stored away. This is much less of a chore, of course, than removing and storing an entire storm window or screen, and much less storage space is required.

A slight modification is the "self-storing" panel-type combination. Here there is some arrangement—clips, hooks, or the like—whereby the unused panel may be stored in the upper half of the window area. Of course, the extra panel, either screen or glass, cuts down the light that can enter through the upper window half. In winter, when the screen is stored at the upper part of the window, about one third of the light through the upper section is cut off, which is a good reason for removing the screen panel where possible (if space for storage is available) even from a "self-storing" combination. The amount of light reduction is significant and important as can be seen by observing the difference in illumination with the screen in place and removed.

Multi-channel and multi-track combinations

More complex and usually more costly are the various storm window and screen combinations in which glass and screen panels may be slid up and down on tracks or in channels.

Some **two-channel** or **two-track** windows provide for the independent raising or lowering of two units, an upper sash and a lower screen or sash. In the spring and fall, the unneeded third unit is removed to storage and replaced. In another type of window, one track or channel holds a glass panel in the upper half and a screen panel in the lower, while a second channel or track holds a glass panel that can be moved up and down according to the season. (A channel has a full U shape,

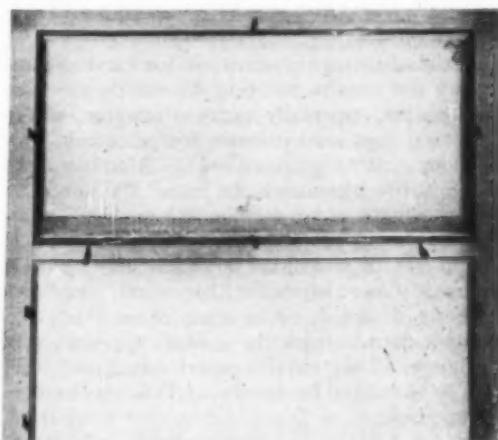
and the sliding panel fits inside. With a **track**, the sliding panel has on its own edge a narrow groove into which the track on the fixed part of the window fits.)

The **three-channel** or **triple-track** window, usually more expensive than other types, allows two glass panels and one screen to move up or down independently of each other. Highly advertised advantages are those of instantaneous change-over from storm window to screen (not usually a factor of as much importance as the salesman would have you believe), and of not having to remove either glass or screen at any time for storage. The screen is merely pushed to the top when not needed, where (as in all self-storing types) it reduces light input into the room during winter months when light from outdoors is most needed.

The **tilt window** (usually a triple-channel assembly) permits cleaning both sides of the glass or screen from within the house without entirely removing the panel.

Weather-sealing of tilt windows is not generally equal to that of the full-channel or track type, and the entire assembly may be deficient in rigidity.

The tilting feature is promoted as a convenience in cleaning the window and screen panels. When one considers the probable frequency of window washing in the average home, the tilt feature is likely to recede in importance. Also, for convenient cleaning it is probable that the panels should



This panel-type combination has the drawback that one glass panel is fixed in the wood frame, making cleaning difficult and possibly hazardous. The clips which hold the removable panels in place are visible from the inside of the house and some persons might consider them unattractive. In some wood-framed combinations, all panels are removable and in some the retaining devices are less prominent.

be removed, and this can be done readily enough with many windows that do not have the structural weakness of the tilting type.

Wood or metal?

Several kinds of combination windows can be obtained with wood or steel as well as aluminum frames. The aluminum-framed types have been so aggressively promoted, however, that they have become synonymous with modern storm windows in the minds of many persons, who seem not to realize that effective and convenient storm windows are regularly made from materials other than aluminum. Actually, aluminum does have some important advantages, but so also do wood and steel.

Wood can sometimes be blended into the architecture and color scheme of a home to better advantage than aluminum, but its outstanding advantage are relative economy of some wood combinations, greater rigidity of wood as compared with aluminum, and the fact that wood can often be more readily installed and repaired by the home craftsman. Offsetting disadvantages include the need for painting and repainting from time to time, plus greater weight and clumsiness, and the possibility in some locations perhaps, of warping, swelling, or rotting. (Any wooden storm windows purchased should be made of wood which has been treated with a suitable paintable preservative, such as one based on pentachlorophenol.) Note that modern wood combinations have removable half-window-sized panels, which obviate the need for removal of the full sash and hazardous work with a ladder in spring and fall.

Aluminum is durable and its lightness in weight is a great advantage in storm windows and screens. It does not require painting, except in corrosive atmospheres, especially near salt water, where aluminum does need painting for protection (unless bought already "Anodized"). Aluminum can be painted to blend with the house, if desired. A zinc chromate paint (obtainable at large paint dealers) should be used as a priming coat. Disadvantages of aluminum are that the windows are usually more expensive than wood; they can, if poorly designed, or in some cases if left unpainted, detract from the general appearance of the house. They require expert installation, and need to be backed by service, and the service may be expensive.

Steel sash is strong and durable, but it requires painting to prevent rusting. An important drawback is that steel panels are relatively heavy and thus relatively difficult to maneuver; especially, they may be hard for a woman to remove for cleaning.

Selecting storm windows

Any attempt to rate storm windows by brands is complicated by the large number of manufacturers and by the even larger number of fabricators who purchase and assemble parts. Sometimes fabricators offer the product under the brand name of the parts supplier—so windows of the same "brand" may vary widely in quality according to how well the assembler happens to have done his work. Many models are offered, and details of design change so often and so greatly that ratings prepared for publication may become obsolete before they are printed. Furthermore, brands widely offered for sale in one area may not be generally available in another part of the country, as some manufacturers and many distributors operate within certain limited areas.

Consideration is now being given to the feasibility of a further study with listings by brands, but it has not yet been determined whether this can be done effectively in the present diversified market. We believe that the information this article provides, applicable to judging both nationally distributed brands and the products of local fabricators, is likely to be more useful to many readers than listings by brand would be.

The following are among the important considerations in judging storm windows before ordering them and in evaluating a completed installation before accepting it. *Don't sign any receipt or "certificate of completion" for any job until you have examined it carefully and are satisfied with all details.*

1. *Are you satisfied that you can operate the sash freely and without difficulty? Do all windows operate smoothly without the application of grease?*

If the answer to this is anything but an unqualified "Yes," do not sign the completion slip or make final payment until the fault is corrected. Stiff motion can be a sign of forced fit, which will very likely become worse rather than better. If there is to be lubrication at all, hard automobile wax, such as *Simoniz* wax, should be used exclusively; petrolatum, oils, or grease should never be used, because of their tendency to pick up dirt and grit and thus jam the window.

Aluminum slides poorly on aluminum. Suitable guides, zinc, nylon, stainless steel, etc., should be built into all points where aluminum might otherwise have to slide on aluminum. Friction of a small pin or spring on the thin edge of a rail is far more likely to give early trouble than the rubbing of a broad surface in a wide channel.

2. *Is the operation of removing sash simple and forthright, or does it require complicated maneuvers?*

3. Does wind pressure on the outside of the storm glass tend to tighten the sash at all points where it could admit air, or does it increase the crack to admit more air? Is there a chance of the sash blowing in at any position?

This is a most important check point. A 40-mile wind exerts a total pressure of 21 pounds on a 24 x 24 inch sash. A storm sash that cannot withstand such wind pressure without increased leakage is a poor design.

4. Will the outside appearance of the window be satisfactory?

5. Can a broken glass be replaced at home or in a local hardware store, or does the design require that it be sent to a manufacturer's service center?

6. Is the charge for replacing a pane of glass and for other needed repairs reasonable, or are such charges likely to constitute hidden increases in cost?

Consumers' Research found that the cost of replacing a 24 x 24 inch pane of glass ranged from \$3 to \$10; the work involved ranged from the simple removal of two screws to rebuilding of the panel, which called for expert work.

7. Do the meeting rails (upper crosspiece of the lower sash and lower crosspiece of the upper sash) interlock or through other means fit tightly when the storm sash is in a closed position?

8. Do the meeting rails match the height of those on your windows, and are the glass areas as large as those on your present windows?

A meeting rail that is higher or lower than that on your window may give a very unsatisfactory appearance. Frame members that are wider than your present frames obstruct light and are likely also to be unattractive in appearance.

9. Do the sash have sufficient friction in their channels to stay in a partly open position, or do they have pins to hold them? If pins are used to lock the sash in partially opened positions, are they located to suit your needs? (Stopping points can often be changed or new ones added at the time of installation.)

10. If advertised as "burglar retarding," is the alleged protection real or just a selling point?

11. Have you reason to have confidence in the ability and integrity of the contractor?

This is the all-important question in all major domestic window installations. Remember that if you need service or parts at all, you are most likely to need them several years from now, when the fly-by-night operator, or man of low business standards, will be gone to work another territory, or is in some other business.

Where possible, try one window first

The small models used to demonstrate storm windows often fail to exhibit weaknesses of design that become all too apparent in the full-size installation. Even if the full-size window operates perfectly, it will be clumsier and harder to handle than the miniature model. It is an excellent idea to have one window installed first and try its operation for a while before contracting for more. This will also give you an opportunity to see how much interference there is between your regular window and the storm window. Select one of your larger windows for this trial. (A dealer or contractor not willing to supply and install a single window may very possibly be one who is not worthy of your confidence. If your proposition is refused, it will be best to look to another source for your windows.)

Prices

Price comparisons are sometimes difficult because of the methods used by dealers. The cheapest aluminum triple-track or channel combination storm windows and screens of reasonably good quality are likely to cost around \$21 each installed on an average size window (say 28 x 60 inches). Many sellers of aluminum combination windows charge the same price for all sizes up to some specified size. A few aluminum windows and most of those made from wood are sold at prices that vary according to size. This difference in pricing practices is important to homeowners with a number of unusually small or unusually large windows.

The best procedure to compare prices is to consider the cost of the entire job, including installation, as offered by various suppliers. Don't sign any contract unless it clearly specifies:

- 1—Type or types of window.
- 2—Total net price for the entire job, installed.
- 3—Lists each window by location, and gives the total number of windows.
- 4—Firm delivery and installation dates.
- 5—Terms of payment.
- 6—Detailed guarantee, specifying just what will be done, and by whom, in case of defects or troubles.

Any "free" extra, as for example a door that may have been offered as a "premium" should be stated in the contract.

Consumers' Research is interested in increasing its fund of information about storm windows by learning of the actual experiences of consumers with various types and brands. Readers are invited to write us about their experiences with serviceable combination windows and with those that have been found, by use, to have serious disadvantages or objectionable features.

Letters from our readers

Hi-fi phonograph reproduction

I would greatly appreciate your advising me what in your opinion are the best units for hi-fidelity phonographic reproduction, regardless of cost, now available for home installation, giving the necessary manufacturer's model number and other identifying marks and if possible the currently prevailing price for each. A long-time subscriber, New York City

► You are surely fortunate in being able to approach this problem without any inhibitions with regard to expense. Based upon the assumption that the hi-fi enthusiast is prepared to go "all out" in his buying, we think the following components, if properly assembled by a person with knowledge and experience in the field, will provide a high-fidelity record playing system which could hardly be excelled by any system that is made with commercially available components:

Tuner—Scott 300	\$160
(or Scott 330C, \$200; or Scott 310-B, for FM only, \$170)	
Preamplifier—McIntosh C-8	89
Amplifier—McIntosh MC-60	199
Turntable—Rek-O-Kut B-12H	130
Speaker—Bozak B-310	770
Pickup—Fairchild 225A	39
Pickup arm—Fairchild 281A	40
Total	\$1427

That will be a nice rig, and the purchase will brighten the day of any dealer, even of two or three; the result will be musical reproduction fit for one of the few remaining kings. Good listening!

Repairing the sewing machine

Can you possibly suggest where we may take our sewing machine to find out if it is really beyond being fixed? The repairman who has it is having trouble getting it in running order, and has given me a new machine "on loan" until my own is fixed. Nothing is wrong but the tensions—which doesn't sound formidable to us—but perhaps it is. These have been slightly off since 1949, and have supposedly had attention, many times. Now I am told that they are hopeless. Any suggestions?

A subscriber, Summit, New Jersey

► We advise you to get your sewing machine back from the man who tells you that he cannot repair it. While you are doing that I would suggest that you write for a copy of the pamphlet "Sewing Machines, Cleaning and Adjusting," Farmers' Bulletin No. 1944, to the Division of Publications, Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

LETTERS from our readers sometimes raise questions of importance to a great many others besides the inquirers. We plan to print these and other specially interesting letters, with our replies, from time to time as space in the BULLETIN permits.

If all that is the matter with your machine is the tensions, you should be able to correct the trouble yourself simply by following the instructions given on pages 12, 13, and 14 of this pamphlet. It is not at all hard to do and in fact we think that you would enjoy doing it.

There is nothing hopeless about the tension problem. One of our consultants tells us that he has never seen anything wrong with tensions that could not be fixed in a few minutes' time by adjustment or at most the replacement of the tension take-up spring which may have become broken or pulled out of shape. It should not take a serviceman more than 10 or 15 minutes to find and correct the trouble.

There is very little that can go wrong in the basic adjustment of a well-built sewing machine. It should never need major overhauls such as replacement of working parts other than shuttle, needle, bobbin case, and the like. The correct length of needle for a particular sewing machine is all important and one should use a heavy or a thin needle, according to the size of thread being used.

With few exceptions, there is nothing wrong with a sewing machine that the homemaker can't fix herself with the help of the U.S.D.A. bulletin and instruction book or that a serviceman could not take care of in a half hour's maximum time.

Of course, if the machine has jammed and has to be taken completely apart to find out what the trouble is, that is one of the exceptions.

Cut-price gasoline again

On page 23 of the May issue of Consumer Bulletin, you say that you "do not think there is any danger that the low-priced gas is likely to cause any particular harm to the car."

I have been experimenting with low-priced or cut-rate gas (not well-known brands) for about 10 years, and my experience has been that while this gas may work satisfactorily in an old style relatively cheap carburetor, it will quickly cause harmful deposits of gum in a mod-

ern, multi-barrel, refined type of carburetor.

A reader, Alexandria, Virginia

► We are glad to have the account of your experience with cut-price gasoline.

Two companies that make good carburetors for automobiles were asked about the problem of possible injury to carburetors by deposits that might be the result of using cut-rate gasoline. Both said that they had never seen any injury to carburetors of their makers that could be ascribed to deficiencies of the fuel or the fact that fuel of sub-standard quality was used. There is, therefore, we believe, a strong possibility that the gumming you have experienced may have been due not to the gasoline, but to other causes such as higher temperatures under the hood of the modern cars (a big engine, in a limited space, and air flow designs determined by the styling trends of modern cars).

How long a life for electric blankets?

Recently my electric blanket went "out of commission"—the manufacturer said the wires had broken because the blanket had been sat on.

I noticed there were quite a number of blankets coming back to be tested. The stock answer was "the wires are broken. For \$14.75 you can have a new blanket." The company requires you to turn in the old blanket too.

A reader, Belmont, Mass.

► Electric blankets can be considered short-lived when compared to other electrical appliances in the home. Consumers are often not aware of this fact, and we suspect that manufacturers and dealers, who are, give them no notice of it. It is probably best not to sit on or lie on an electric blanket, as the fine wiring can be pulled out of its connectors in the blanket or possibly be broken. Breakage of the wires is not too common, but if a wire is pulled out from a connector or other part in the blanket, the effect would be the same.

It is common for electric blanket manufacturers to offer an exchange deal on a defective blanket that is "out of guarantee." The labor and time that would be required to repair a blanket that is not working properly could sometimes amount to more than the amount asked of the customer on the exchange deal.

Our advice would be to purchase a blanket with the longest possible guarantee, and do not under any circumstances buy a "private brand" (department store brand) or other electric blanket whose maker's name is not known and does not appear in permanent form on the blanket, with his address. File the guarantee carefully; you're likely to have need for it.

Fire-warning systems

BY CALVIN H. YUILL

Information that will help the consumer select alarm equipment for his home

THE National Fire Protection Association reports that approximately two thirds of all fires in buildings occur in dwellings. It is also estimated that one half of the thousands of persons losing their lives in these home fires each year are trapped in the burning building and suffocate before they can escape. In a great many instances, the loss of life occurs in fires that happen after the family has retired for the night.

Many of these tragedies could have been avoided if an early warning had been sounded to notify persons in the house of the danger. Moreover, with such warning, the occupants could have awakened others, called the fire department, and in other ways acted to reduce the losses of life and property.

A survey conducted by Southwest Research Institute disclosed that out of 400 homes checked, only 31 had a fire extinguisher and none had any type of fire warning system. Of the 31, the extinguishers were properly maintained in only 9 instances. This local polling is indicative of a national problem. The question is, why?

Most significant is the lack of knowledge, on the part of the homeowner or renter, of what equipment is available; the relatively high cost of the better systems; and overreliance on fire insurance and the telephone. Unfortunately, practices of some manufacturers and dealers, far from educating the public to the need for fire-warning equipment, have helped to destroy public confidence in some of the excellent fire-warning systems that are available. These sales tactics often deviate far from reasonable and ethical merchandising conduct, and organizations interested in the consumer have expressed concern over the techniques aggressive high-pressure salesmen and their employers use in their selling of home fire alarm systems. There have been reports of excessive charges for time-payment purchases, and actual misrepresentation of cost and performance of products that are sometimes of an inferior and ineffective nature.

Despite such reports, however, it would be unfortunate indeed if the impression were created that good home fire-warning systems do not exist or that the best way to avoid being cheated is to

The accompanying article was written for Consumers' Research by a highly qualified expert in the field of fire protection, Calvin Yuill, fire technologist of Southwest Research Institute, and member of National Fire Protection Association, Society of Fire Protection Engineers, and American Society of Safety Engineers.

Much experience with schools, institutions, business and industry has proven the value of good fire warning systems. Thousands of lives and millions of dollars' worth of property are saved each year through their use. For those who realize the value of this form of protection, good systems are available and "spot" or partial systems can provide a helpful degree of protection. The information presented in the accompanying article will provide a basis for selecting the best fire warning device system that the financial resources of the family will permit, and will help the homeowner to see through the kinds of misrepresentations and trickery that are prevalent in this field.

completely ignore a valuable method of preventing some of the tragic results of fire.

What, then, are the factors to consider in selecting a satisfactory home fire-warning system?

Actually, any householder can judge the merits of any particular fire-warning device or system with the help of a few basic principles as guideposts. In case of doubt, a competent fire protection engineer or fire department official can usually give sound advice in the matter. Technical know-how certainly would help in reaching a decision, but commonsense plus a knowledge of the essentials will at least arm the prospective buyer against the onslaught of a glib salesman whose only concern is to collect a substantial commission.

The three basic elements involved are: 1) the fire detection element; 2) the alarm itself (bell, gong, or whistle); and 3) a reliable source of power or energy. If any of these key elements fails when needed, the system is useless.

Self-contained units

The simplest system combines all three elements in one unit. The first fire alarm is alleged to have been invented by the Chinese, and consisted of bunches of firecrackers hung near the ceiling about the house. If fire started, eventually the firecrackers would explode in a series of staccato reports that would supposedly awaken the family and permit their escape.

Unit "E" in the accompanying illustration is just that sort of device; it is nothing more than a powerful "firecracker" held in a metal shell and designed to explode at a temperature of 135°F. It is about 2 inches high and 1 inch wide. Since the cost is low—much less than \$1—each room and closet can have one of these exploders hung near the ceiling to give good coverage.

Unfortunately, the explosion of such a unit, located in a basement, kitchen, or clothes closet with intervening doors closed, might not be audible in the bedrooms. Besides, the noise, if it is heard, could be mistaken for the backfiring of a passing truck or auto or even passed off lightly as being part of an unusually vivid dream. And the stability of the devices of this type under varying atmospheric conditions—the heat of summer, cold of winter, dryness and humidity—is open to some question. When the operating condition of this type is in doubt, there is no method of testing the device except by exploding it—and so destroying it—which could be a dangerous procedure for an inexperienced person.

A somewhat similar low-cost device is shown

A fire alarm association executive, Mr. Cy Harriman, speaking before the National Fire Protection Association in Chicago characterized the home fire alarm business as a national scandal—"a rallying ground for crooks and crack-pots. Misrepresentation and downright fraud have become guiding sales principles." The uninformed American consumer, according to Mr. Harriman, has been sold a "fantastic assortment of gimmicks, gadgets, and junk."

There are useful alarm devices and systems, honestly sold, but the wise consumer will buy with caution, from a reputable firm.

at "F." This device is about 1 inch wide and 5 inches long. It contains two metal cylinders of compressed gas inside the outer metal shell; the latter has an opening at each end. The inner cylinders are supposed to explode at about 135°F. It is subject to the same objections as device "E" and the Chinese firecrackers.

The deficiencies of this simple explosive type of alarm point to specific criteria to guide the homeowner in selecting a suitable system.

1) The signal must be loud enough to be heard throughout the house and certainly in the bedrooms.

2) To prevent confusion with other sounds, the signal must have a distinctive tone and continue for at least 5 minutes.

3) All components of the unit or system must remain stable under all of the influences of time, temperature, humidity, and other elements of the environment to which they would be subjected in the long time preceding a fire.

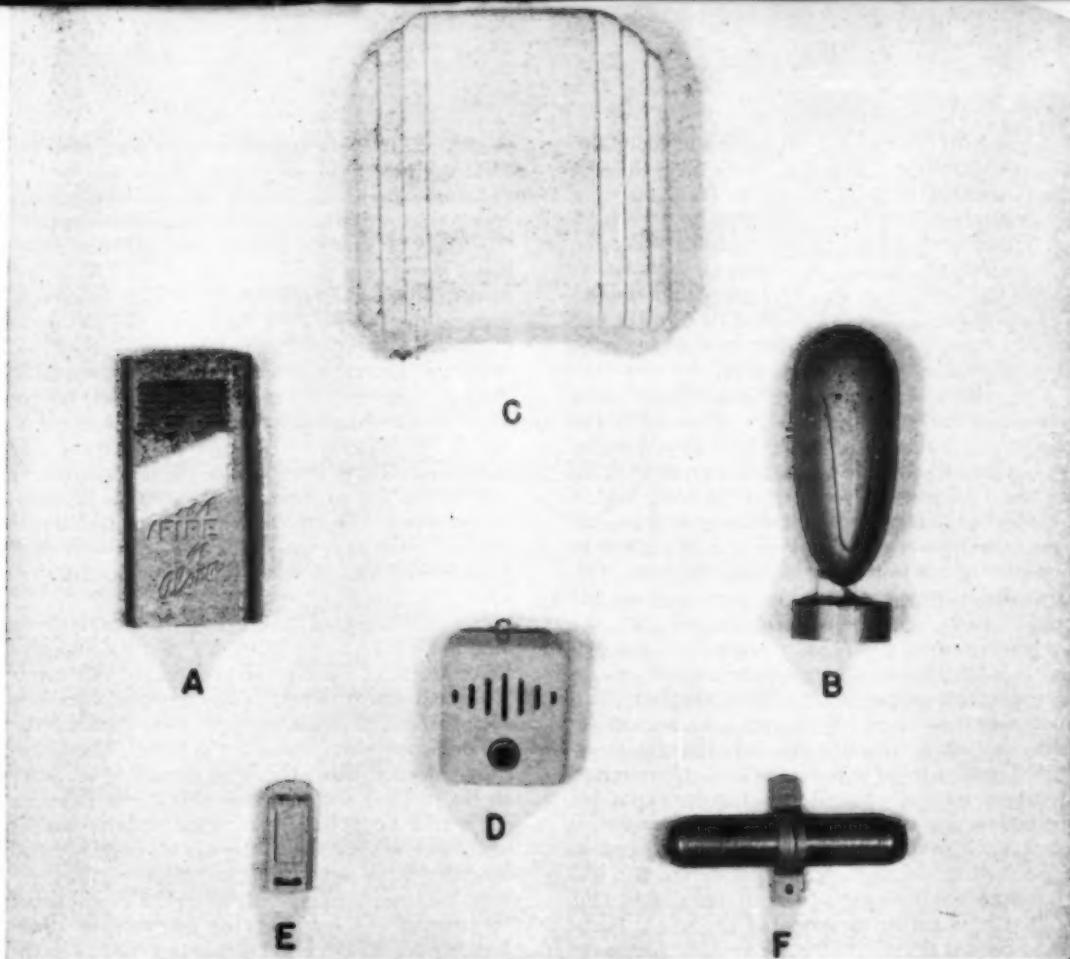
4) There must be provision for periodic maintenance and testing, to assure proper operation when the emergency arises.

A fifth criterion can be added—the alarm device should be foolproof, and not subject to removal or tampering by inquisitive hands or Fourth of July celebrants.

There are many types of self-contained fire alarms sold for home use. They are sold by hardware stores, department stores, mail-order houses, house-to-house canvassers, and other outlets. Unless the buyer is aware of the fundamentals involved, he may very likely purchase something which will be little more than an interesting conversation piece. Bear in mind that an unreliable device may be worse than none, and may be dangerous in that it will give the householder an entirely false sense of security.

A department store in a large city distributes the fire alarm labeled "B" in the illustration. This is an attractively designed unit sold at \$3.50. For fire detection, there is a bimetallic strip in the base that bends as the temperature increases, until at 140°F a contact is made in an electric circuit and a buzzer similar to a bicycle horn is activated. The power source is a single flashlight battery.

This unit does have advantages over the explosive types in that the noise will continue for 10 minutes or more (when the battery is new) and the condition of the battery and buzzer can be easily tested by pressing a finger against the bimetallic strip in the base. However, the noise level is not high, corrosive fluids from a worn-out battery may seriously harm the unit, and a tinkering husband or inquisitive child could easily and unwittingly change the temperature setting, mak-



Local, spot-type fire alarms

- A and B—Flashlight-battery-powered warning systems of a bicycle-horn type.
 C—Warning device using a hand-wound clock spring.
 D—Buzzer device powered by 110-120 volt alternating current from the house wiring system.
 E—"Firecracker"-type warning device.
 F—Explosive-type warning device using pressurized gas.

ing future operation entirely unreliable. In addition, someone must remember to replace the battery every few months.

Unit "A" in the illustration is similar; it retails at \$6.25, and uses two flashlight batteries rather than one. It is subject to the same objections as unit "B" and both demonstrate a sixth criterion that should be added to those already listed; the power source must be reliable.

A more reliable source of power for the home fire alarm is the 110-120 volt circuits available in nearly all homes today. The device marked "D" in the illustration is only 3 inches square and 1½ inches deep. It has prongs on the back so that it can be plugged into any standard electrical outlet. Since few electrical outlets are located near the ceiling, the logical place for a fire detector

(since that is where heat from a fire first accumulates), a new wall or ceiling outlet should be installed for permanent use with this type of alarm. This alternating-current-powered device sells for \$7.95, to which must be added the cost of installing a new properly located electrical outlet. While the noise level is not high, it is constant as long as the electric current stays on and the temperature stays high. In the event of a power failure during a storm, or if the house wiring is involved and a local or main fuse should blow in the early stages of a fire, the unit of course would not operate.

Another kind of electrical alarm, sold for \$7.50 to \$15, is considerably larger. This has an 8-inch gong in an attractive case with a cord to be plugged into a near-by electrical outlet. This

unit is about 7 inches square and 3 inches deep. The detector element is a bimetallic strip in some instances, and a fusible plug, which melts at a predetermined temperature, in others.

A completely self-contained unit of the same size and cost as the last mentioned is shown at "C." This has a large clapper gong that is energized by a heavy spring wound with a key as one winds a clock. The heat detector is a bimetallic strip or, in one type, a fusible plug.

The next and last type of alarm device to be mentioned for spot locations in the home is the only type for this purpose that has the listing and approval of the Underwriters' Laboratories. (This approval is granted after rigid tests by highly qualified engineers.) Manufacturers of approved protection devices of this type are permitted to put the *UL* label on the units they produce. Devices of this type are priced in the vicinity of \$25 to \$35 each. This equipment, larger than the others described, comprises a compressed-gas cylinder, a horn, and a thermostatic control, all interconnected as one unit. When the heat in a room reaches 135 to 140 degrees (180 degrees for attic or "warm spot" locations), the gas is released and a loud blast of about 10 minutes' duration results. Some manufacturers provide for connecting several cylinders at different locations, each with its thermostatic control, and all connected to the same horn. There are two disadvantages in the type of device described. One is that it is rather expensive if the whole house is to be protected, and the second is that there is no convenient way of testing the device to check that it is ready to sound an alarm if a fire occurs. If the compressed gas in a cylinder is consumed in sounding the alarm during tests, the cylinder may be returned to the manufacturer for replacement. Or a cylinder for test purposes may be purchased and added to the original installation at the time the equipment is bought.

Fire-warning systems

With the exception of the multiple installation of the approved compressed-gas alarm system just referred to, all of the warning devices so far mentioned are of the "spot" location type. Complete systems can be purchased that provide a small fire detector unit or thermostat for each room and potential danger area. These detectors, unobtrusively installed on the ceiling or on the walls near the ceiling, usually are connected to a power supply and to a gong in the master bedroom, where a test button also may be located.

A well-known mail-order house advertises a system of this type in its current catalog. A kit including a 6-inch bell, three thermostats, test button, transformer, and wire is available for

\$17.95. Extra thermostats may be purchased for \$3.75 each.

Assuming reliability of the various components, and correct installation by a licensed electrician, this type of system should provide reasonably good assurance of warning in case of fire. Since few householders have facilities to conduct qualifying tests on the components, they must depend upon the *UL* (Underwriters' Laboratories) or F.M. (Factory Mutual) labels to assure acceptable quality. (Factory Mutual labeling covers equipment suitable primarily for industrial applications.) A weakness of the system that has just been described is that, if the electric current is interrupted for any reason, the system becomes inoperative. Also, to reduce costs, many "do-it-yourself" fans may attempt to install the system themselves—with a wide variety of possible results.

A modification of this system, available from some manufacturers, provides a continuously-closed detector circuit and a separate but interconnected alarm circuit. The detector circuit is energized from house current and contains the fire detection elements of the system. The alarm circuit is energized by one or more dry batteries of No. 6 size, and contains the alarm element. (It would be prudent to replace such cells at least once a year, to assure their being in good condition when needed.)

An increase in temperature to 135°F will cause the normally-closed detector contacts to open. This breaks the circuit and operates a relay in the alarm (battery-powered) circuit and the alarm is sounded. Also, any interruption of the house current will likewise sound an alarm.

With newer, long-life batteries, such as the nickel-cadmium batteries (which are very much more expensive than dry batteries and much more expensive than lead-acid storage batteries), this system perhaps is as reliable as any yet devised. However, interruptions in the house current present a problem, if frequent, for the alarm would sound, creating a noise nuisance some might be tempted to avoid by shutting off the entire system.

Design variations in fire detector and alarm types are innumerable. Unfortunately, however, the installed cost of an effective and dependable alarm system probably would be in excess of \$300 for a five-room-and-basement house and in some cases might be considerably higher.

This installed cost, which will seem high to many, can be amortized over the years; thus, if amortization runs over a 15-year period, the average cost will be in the range of \$20 to \$40 per year. With proper testing and maintenance, such a system should be excellent insurance against being caught unawares by fire.

A sizable reduction in the cost of any complete system can be achieved if the installation is made when the house is first built. In installing an alarm system at that stage, unsightly wires, tubing, or pipes can be hidden in the walls, and at a minimum of expense. One residential development on Long Island featured a complete fire alarm system in each house.

Undoubtedly, the best fire-warning system is one that is connected electrically to central fire headquarters or a central fire-reporting service. With such a system, frequently used in business and industrial establishments, a local warning can be given to the occupants and the fire department warned at the same time. This eliminates costly delays in reporting fires but it is rarely used in homes because of the very considerable expense.

There are also available automatic sprinklers and alarm systems combined which not only signal a warning of the fire but immediately spray the fire area with water. While such systems are used in factories and offices, very few have been purchased for installation in homes. Such an arrangement is well worthy of consideration by anyone who can afford to give his home the utmost in fire protection that is available. Information on fire alarm systems available in your locality can be obtained from dealers listed in the business section of telephone directories in the large cities under Fire Alarm Systems or from literature obtainable from officials of your city fire department.

Some factors to consider

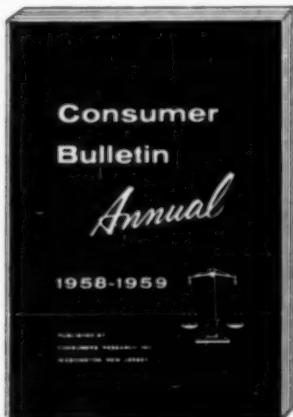
Fire detection and alarm devices or systems, large or small, are mechanical and electrical and as such

require care and proper maintenance. Anyone who is not prepared to see that maintenance is provided would perhaps do just as well not to make the expenditure on the system.

It should be realized that no home fire warning system can possibly afford protection in every kind of fire, or under every circumstance. Flash fires and fires resulting from gas explosions, for instance, may travel so fast as to render any fire alarm system useless. A fire alarm system will not be a sufficient means of protection of invalids or small children left alone in their homes, since they probably would need help to get out of the building in case of fire. Properly installed and maintained, however, good fire-warning systems would prevent a considerable proportion of the tragedies that are so frequently recorded on the front pages of the daily press all over the country.

Great improvements in fire detection have been made in recent years. It is not beyond the realm of possibility that a system will be developed through research that will detect an incipient fire and send a coded signal by radio or otherwise to the fire department, at the same time sounding the house alarm—and do all of these at first cost which will not be considered unreasonable. As yet, however, industry has been reluctant to support scientific research in this much needed area of development.

Finally, and regardless of what fire protection measures are taken, the householder should keep clearly in mind that over 90 percent of all fires are preventable. Constant vigilance to eliminate possible fire hazards is the most effective means of fire prevention.



Do you have a copy?

The big, new 1958-59 CONSUMER ANNUAL is off the press. Its 224 pages provide a compact, concise guide to wise buying, rating products by brand name. In addition to a convenient summary of a wide range of previous product reports, there is much new and useful information that has not appeared in any monthly CONSUMER BULLETIN.

The new ANNUAL was mailed in September to all who sent in advance orders, but you can still get a copy by using the handy coupon on the next page. Keep the product ratings up-to-date by subscribing to CONSUMER BULLETIN monthly at the special combination rate.

Gutter screening

HOMEOWNERS who enjoy shade trees near their homes are faced each fall with the prospect of having their roof gutters clogged by falling leaves and twigs. Protecting gutters with a wire mesh does not eliminate the chore of gutter cleaning, but it can make it much easier and less frequent.

B. Intermediate

Steelco Gutter Screen (Steele Mfg. Co., 445 Winchester Ave., Ashland, Ky.; available from the manu-

facturer, Meridian Products Co., 366 Madison Ave., N.Y.C., Montgomery Ward & Co., and Sears, Roebuck & Co.) Three-foot lengths, 5 in., 6 in., and 7 in. wide, about 60c to 90c per section. Found by Consumers' Research to be helpful, but not completely effective. Galvanized steel screens are suitable for use with wood gutters, galvanized sheet-metal gutters, or aluminum gutters except under unusually corrosive conditions. With copper gutters, the type of screen with copper clamps (available at 6c extra from the manufacturer) must be used.

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Ratings of Current Motion Pictures

THIS SECTION aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:
Boxoffice, Cue, Daily News (N. Y.), The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, The Tablet, Time, Variety (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows

adv—adventure
 bio—biography
 c—in color (Ansco, Eastman, Technicolor, Tricolor
 Warner Color, etc.)
 car—cartoon
 com—comedy
 cri—crime and capture of criminals
 doc—documentary
 dr—drama
 fan—fantasy
 hist—founded on historical incident
 mel—melodrama
 mus—musical
 mys—mystery
 nov—dramatization of a novel
 rom—romance
 sci—science fiction
 soc—social-problem drama
 trav—travelogue
 war—dealing with the lives of people in wartime
 wes—western

A	B	C	A	B	C
1	4	1	Andy Hardy Comes Home	com AYC	—
—	3	12	Another Time, Another Place	dr A	—
—	2	1	Apache Territory	wes AYC	2
—	1	3	Astounding She Monster, The	sci AY	—
—	1	7	Attack of the Fifty Foot Woman	sci A	—
—	4	5	Attila (Italian)	hist-mel-c AY	—
—	6	1	Awakening, The (Italian)	dr AY	1
2	3	—	Badlanders, The	wes-mel-c A	3
—	3	4	Badman's Country	wes AYC	—
—	2	1	Big Barrier, The (German)	dr-c AY	2
1	3	—	Big Country, The	wes-c A	—
—	2	2	Bigamist, The (Italian)	com A	2
—	2	7	Blood Arrow	mel AY	5
—	5	4	Blood Murder at St. Trinian's (British)	com AY	1
—	3	5	Bonnie Parker Story, The	cri-mel A	2
1	12	3	Bravados, The	wes-c AY	6
—	5	—	Buchanan Rides Alone	wes-c AYC	2
—	4	2	Bullwhip	wes-c A	11
—	4	4	Camp on Blood Island, The (British)	war-mel AY	2
—	7	—	Campbell's Kingdom (British)	mel-c AYC	2
—	5	2	Captain from Koepenik, The (German)	com AYC	2
—	7	3	Case Against Brooklyn, The	cri-mel AY	9
1	11	2	Case of Dr. Laurent, The (French)	dr A	—
1	4	2	Cat on the Hot Tin Roof	dr-c A	7
—	5	8	Certain Smile, A (French)	nov-c A	1
—	3	1	China Doll	war-dr A	2
—	1	2	Circus of Love (German)	mel-c A	4
—	6	1	Cole Younger, Gunfighter	wes-c AYC	8
—	2	7	Colossus of New York, The	sci-mel AY	2
—	4	5	Confessions of Felix Krull, The (German)	nov A	6
—	1	3	Cool and the Crazy, The	soc-dr A	9
—	3	3	Cop Hater	cri-mel A	2
—	9	2	Count Five and Die (British)	war-mel AY	6
—	3	4	Country Music Holiday	mus-com AYC	3
—	2	1	Crazy in the Noodle (French)	com A	4
—	5	4	Cross-Up (British)	mys-mel AY	3
3	10	3	Cry Terror	mys-mel A	10
—	3	3	Cry-Baby Killer, The	soc-mel A	2
—	3	3	Curse of the Demon	mel AY	8
—	2	5	Dangerous Youth (British)	soc-mel AY	2
—	2	4	Deadly Decision (German)	war-dr A	4
1	4	2	Defiant Ones, The	soc-dr A	5

A	B	C			A	B	C		
3	9	3	I Accuse (British)	.dr AY	3	7	1	Reluctant Debutant, The	.com-c AY
—	2	3	I Bury the Living	.mys-mel A	—	6	3	Return of Dracula, The	.mel A
—	6	3	I Married a Woman	.com AY	—	5	3	Revenge of Frankenstein, The	(British)
1	6	2	Imitation General	.war-com AY	—	5	1	sci-mel-c AY	
—	1	2	In the Money	.com AY	—	6	—	Ride a Crooked Trail	.wes-c AY
2	12	1	Indiscreet	.com-c A	—	9	2	Robbery Under Arms (British)	.mel-c AY
—	2	6	Island Women	.mus-mel A	—	9	4	Rock-a-bye Baby	.mus-com-c AYC
—	2	1	It! The Terror from Beyond Space	.sci AY	2	7	2	Rooney (Irish)	.com A
—	2	6	Jet Attack	.war-mel A	1	11	4	Rouge et Noir (French)	.dr-c A
—	1	6	Juvenile Jungle	.cri-mel A	—	3	1	Run Silent, Run Deep	.war-dr AYC
1	6	1	Kathy O'	.com-c A	—	3	1	Rx Murder (British)	.mys-mel A
2	10	5	Key, The	.war-mel A	—	3	3	Sabu and the Magic Ring	.adv AYC
—	9	6	King Creole	.mus-mel A	1	9	5	Saddle the Wind	.wes-c AY
1	8	7	Kings Go Forth	.war-dr AY	—	4	1	Saga of Hemp Brown, The	.wes-mel-c AYC
—	10	4	La Parisienne (French)	.com-c A	—	2	10	Screaming Mimi	.cri-mel A
—	5	3	Last of the Fast Guns, The	.wes-c AYC	—	3	3	Secret Place, The (British)	.cri-mel A
—	5	4	Last Paradise, The (Italian)	.doc-c A	—	3	3	Seven Guns to Mesa	.wes A
—	5	1	Law and Disorder (British)	.cri-com A	—	3	3	She Demons	.sci-mel A
1	9	6	Law and Jake Wade, The	.wes-c AYC	—	3	2	She Played with Fire (British)	.mys-mel A
—	5	8	Left Handed Gun, The	.wes A	5	10	—	Sheepman, The	.wes-c AYC
—	4	4	Let's Rock	.mus-com AYC	—	6	2	Showdown at Boot Hill	.wes AY
—	5	4	Life Begins at 17	.dr A	—	7	1	Sierra Baron	.wes-mel-c AYC
—	12	4	Light in the Forest, The	.hist-dr-c AYC	1	7	1	Snorkel, The (British)	.cri-mel AY
—	1	2	Lily of the Harbor (Greek)	.dr A	—	3	1	Sorcerer's Village, The	.doc-c A
—	7	2	Lineup, The	.cri-mel AY	6	6	4	South Pacific	.mus-dr-c AY
—	4	1	Littlest Hobo, The	.dr AYC	3	7	4	South Seas Adventure	.trav-c AYC
—	10	1	Live Fast, Die Young	.cri-mel A	—	5	3	Space Children, The	.sci AYC
—	8	1	Lone Ranger and the City of Lost Gold, The	.wes-c AYC	—	4	3	Space Master X7	.sci AY
3	9	5	Long Hot Summer, The	.mel-c A	—	1	4	Spy in the Sky	.mys-mel AYC
—	4	6	Lovemaker, The (Spanish)	.dr A	—	6	9	St. Louis Blues	.mus-biog AYC
—	1	2	Lucky Jim (British)	.com AY	2	10	—	Stage Struck	.dr-c A
—	3	6	Macabre	.cri-mel A	—	7	4	Stakeout on Dope Street	.soc-mel A
—	4	4	Machine Gun Kelly	.cri-mel A	—	2	4	Steel Bayonet (British)	.war-mel A
—	9	9	Mam'zelle Pigalle (French)	.com-c A	—	2	4	Suicide Battalion	.war-mel AY
—	3	4	Man from God's Country, The	.wes-c AYC	1	4	6	Tale of Two Cities, A (British)	.nov AYC
—	3	4	Man in the Raincoat, The (French)	.cri-mel A	—	3	2	Tank Force (British)	.war-mel-c AYC
—	4	6	Manhunt in the Jungle	.doc-c AY	—	3	5	Tarzan's Fight for Life	.adv-c AYC
—	8	2	Maracaibo	.mel-c A	2	10	5	Teacher's Pet	.com A
5	9	4	Marjorie Morningstar	.nov-c A	—	5	7	Teenage Wolf Pack (German)	.mel A
2	5	6	Mark of the Hawk, The	.soc-mel-c AY	5	5	7	Ten North Frederick	.dr A
4	6	3	Matchmaker, The	.com AY	—	4	2	There's Always a Price Tag (French)	.mys-mel A
1	4	—	Me and the Colonel	.war-com A	—	3	6	Thing That Couldn't Die, The	.cri-mel A
3	11	3	Merry Andrew	.mus-com-c AYC	—	6	7	This Angry Age	.dr-c A
—	4	4	Mitsou (French)	.com-c A	1	10	3	This Happy Feeling	.com-c AYC
—	2	1	Naked Africa	.trav-c A	—	4	5	Thunder Road	.cri-mel A
—	5	7	Naked and the Dead, The	.war-dr-c AY	—	4	4	Thundering Jets	.war-dr AYC
—	8	2	Naked Earth, The (British)	.mel A	—	3	1	Time Is My Enemy (British)	.cri-mel AYC
—	3	3	Never Love a Stranger	.mel A	3	8	7	Time to Love and a Time to Die, A	.war-dr-c A
—	7	3	Night Ambush (British)	.war-mel AY	—	4	8	Too Much, Too Soon	.biog A
—	4	4	Night of the Demon (British)	.mys-mel A	—	5	9	Touch of Evil	.mel A
—	6	6	No Sun in Venice (French)	.mel-c A	—	3	4	Toughest Gun in Tombstone	.wes AYC
1	11	3	No Time for Sergeants	.war-com AYC	—	6	5	True Story of Lynn Stuart, The	.wes A
—	4	4	Notorious Mr. Monks, The	.mel A	1	3	7	Twilight for the Gods	.dr-c A
3	2	3	Old Man and the Sea, The	.dr-c AY	—	6	4	Uncle Vanya	.dr A
—	1	2	Once Upon a Horse	.wes-com AY	3	8	6	Vertigo	.mys-mel-c AY
—	8	3	One that Got Away, The (British)	.war AYC	—	5	6	Vicious Breed, The (Swedish)	.soc-mel A
—	—	3	Outcasts of the City	.war-mel A	—	—	3	Viking Women and the Sea	.wes A
1	6	6	Paris Holiday	.com-c AY	3	8	7	Serpent	.adv AY
—	2	4	Poor but Beautiful (Italian)	.com A	—	4	6	Vikings, The	.hist-dr-c A
—	6	6	Portrait of an Unknown Woman (German)	.dr A	—	4	6	Violent Road	.mel AY
4	9	2	Proud Rebel, The	.dr-c AYC	—	9	1	Voice in the Mirror	.soc-dr AY
—	5	2	Quantrill's Raiders	.wes-c AYC	—	1	6	War of the Satellites	.sci AY
—	2	1	Queen of Outer Space	.sci-c A	6	6	—	White Wilder	.doc-c AYC
—	2	3	Raw Wind in Eden	.mel-c A	—	2	2	Wife for a Night (Italian)	.mus-dr A
—	2	1	Rawhide Trail, The	.wes-mel AYC	—	6	1	Wild Heritage	.wes-c AYC
—	—	—			9	2	1	Windjammer	.trav-c AYC
—	—	—			—	4	4	Wink of an Eye	.mys-mel A
—	—	—			—	1	5	Wolf Dog	.mel AYC
—	—	—			—	3	4	Young and Wild	.soc-mel A
—	—	—			5	6	6	Young Lions, The	.war-dr A
—	—	—			—	7	2	Your Past is Showing (British)	.com AY

The Consumers' Observation Post

(Continued from page 4)

STEREO DISKS AND STEREO EQUIPMENT are the subject of much discussion in high-fidelity circles. Whether current developments will render obsolete existing equipment for monaural LP recordings is open to question. The magazine Hi-Fi Music at Home reports that stereo disks are not equal in audio quality to stereo tapes. Furthermore, the magazine points out that good hi-fi components last for years and have given their owner great satisfaction, hence it is likely that the demand for monaural records will continue for a long time. The editor further predicts that, for the most part, the components for stereo systems will be bought principally by those who already have monaural installations and want to improve them.

* * *

HYDROGENATED PEANUT OIL FAT fed at high dietary levels has proved to be injurious to test animals, according to one group of investigators. Most commercial peanut butter on the market includes some hydrogenated peanut oil in its formula.

* * *

SOUNDPROOFING TILE FOR CEILINGS provides relief for jangled nerves. That is the sum and substance of a campaign by the Acoustical Materials Association in New York City aimed at convincing homeowners that their houses are too noisy. According to The Wall Street Journal, home noise levels have been raised by the presence of machines for heating and cooling in the living areas of the single-level ranch house, by the combination kitchen-dinning-room-living room areas, and by the use of scatter rugs instead of wall-to-wall carpets. The tile makers claim that fiberboard ceiling tiles will absorb 75 percent of the sound hitting them and noticeably quiet a noisy house. Since soundproofing a ceiling is a fairly costly proposition, the tile makers are pushing a do-it-yourself package to permit the homeowner to do the job for 20 to 30 cents a square foot for materials.

* * *

"MIRACULOUS SKIN REJUVENATION" may be promised or at least implied by sales claims for some particular product, and before the Food and Drug Administration can develop the evidence necessary to reach a decision as to whether or not it will accomplish the benefits claimed, the public becomes disillusioned and stops buying or the advertiser turns to some other appeal. This point was brought out in a speech last June, by Commissioner George P. Lerrick of the Food and Drug Administration who reported a number of examples of extravagant cosmetic advertising including the use of "magic" ingredients such as chick embryo extract; the so-called bio-stimulines that are supposed to regenerate new cells, prevent wrinkles and sagging chin; a pigskin extract as a skin rejuvenator; shark oils to bring vitality to dry or aging skin; and plankton—minute organisms of the sea—for use as a "skin food." He reported, in fact, that there was even a tranquilizer for the skin, heralded as relieving the appearance of stress and strain due to the pace of modern living. He urged that members of the Toilet Goods Association develop some technique to prevent its members from getting mixed up with such wild promotional claims.

* * *

THE POSSIBILITY THAT PHOSPHORUS rather than fluoride may be the prime factor in prevention of dental decay has recently been suggested. In an interview with the Food Field Reporter, Robert S. Harris, Professor of Biochemistry of Nutrition at the Massachusetts Institute of Technology, discussed recent studies designed to find out if the phosphorus of metaphosphoric acid has an anti-caries effect when included in the diet of test animals. Dr. Harris pointed out that the incidence of caries in the molars of hamsters on the caries-producing control ration was 73 percent, while that for animals on the same diet supplemented with pulverized metaphosphoric acid was 45 percent. This difference Dr. Harris considered significant, in a statistical sense.

IF MOVING DAY IS IN THE OFFING, give some thought to the problem before the actual day arrives. One large commercial mover offers three helpful suggestions: Set the moving date far in advance and try to move in the middle, not the end, of the month. Before starting to pack, throw away as many things as possible. Get an estimate from a reputable mover, and remember that the figure you get is not the actual cost of your move, which will be determined by the man-hours of work required, plus mileage.

* * *

WILL CONSUMERS BUY THE FORTHCOMING NEW AUTOMOBILES as rapidly as they can be turned off the assembly line? That is a big question facing manufacturers, dealers, and members of the automobile workers' union, along with parts suppliers, and a number of other interested parties. One big complaint about automobiles in recent years is the many little things that have gone wrong or are wrong to start with. As one writer to Automotive News pointed out last June, a bit of trim is out of line here, a tire is on slightly crooked, knobs stick, windshields leak, and many other small imperfections turn up in a new car that the dealer is either unequipped to handle or it is too costly for him to make all the adjustments needed. If Mr. Reuther's union would look into the matter of developing better standards of workmanship, its demands for ever-higher wages might be more likely to receive support from consumers who are now eyeing with interest foreign cars that appear to have better finish and show evidence of much closer inspection and attention to details.

* * *

FROZEN MEATS ARE NOT APPEALING TO CONSUMERS. According to a trade publication, Armour & Company and Swift & Company have found it necessary to reduce the number of items included in their lines of frozen meat. One study suggests that it is stubborn prejudice against frozen meat due to an association in the public's mind of "cold storage" foods with inferior quality. Another study reports that no substantial volume has developed in packaged frozen steaks, chops, and roasts, because the discoloration resulting from freezing, coupled with long thawing time required, has discouraged discriminating consumers. Probably the plain truth of the matter is that frozen meat is at best an emergency ration that cannot compare in flavor and palatability with freshly-cut meat.

* * *

THE HOLLAND FURNACE COMPANY has been the subject of much criticism because of the sharp selling practices used by its salesmen in various sections of the country. The Better Business Bureau of Philadelphia reports that as a result of action brought by Assistant District Attorney, Jack M. Myers, ten Holland furnace salesmen were fined a total of more than \$1300 by Judge Ethan Allen Doty of Quarter Sessions Court last June, and ordered to pay costs amounting to \$25 for each bill of indictment. At the trial many witnesses testified that the men had represented themselves as city hall inspectors, or as coming from the fire marshal's office, in order to gain admittance to the furnace room. After they had dismantled the furnace, they would tell householders that a new furnace was needed since the old one might blow up and the entire family might be asphyxiated. In spite of judge's action, the Better Business Bureau reports that complaints continue to come in from other parts of the country of similar tactics on the part of this company's salesmen.

* * *

ADVERTISING is undergoing some changes during the current recession. The Wall Street Journal reports that newspapers, magazines, and business publications are getting less advertising, but radio advertising is picking up. There has been an increase in volume of TV advertising, partly due to the increased number of TV stations. Advertisers who have been talking in generalities for many years and carefully omitting any mention of the price are now moving toward a more practical appeal, according to one advertising man. Public opinion is given credit for bringing about the change. There are still too many advertisements, however, that do not indicate the price of the product they are trying to sell.

Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Adam: *Giselle*. Royal Opera House Orchestra under Fayer. 4 sides, Angel 3583B. \$9.96. Most famous ballet of a 19th century French composer of opera comique. Full of fine tunes. Often the pace is leisurely as though performed for a slow-footed dancer but Fayer knows what he's up to. Good recording...yet, not as full-toned as some disks. **AA A**

Bartók: *Sonata No. 2* & **Hindemith:** *Sonata in C & Stravinsky: Duo Concertant*. Schneiderhan (violin), Seeman (piano). Decca DL 9980. \$3.98. It's convenient to have three sonatas by modern composers on one record. Cerebral music it is, which doesn't make friends quickly. The playing requires a bit more drama and bite. Acceptable recording. **A A**

Beethoven: *Sonatas Nos. 8 and 9*. Milstein (violin), Balsam (piano). Capitol PAO 8430. \$4.98. The "Kreutzer" and the "Champagne" Sonatas—great works. The playing offers the approach of the virtuoso rather than the chamber musician. The players have technique to spare but take liberties with the score and the feeling is always "big scale." Yet, it's vibrant, rich, romantic, and these qualities will certainly appeal to many. Recording favors the violin. **A A**

Delius: *Hassan, Arabesque, Over the Hills and Far Away*. Royal Philharmonic Orchestra, BBC Chorus and Soloists under Beecham. Columbia ML 5268. \$3.98. Nobody plays Delius so well as Beecham. If this music appeals to you, by all means get this record. **AA AA**

Falla: *The Three Cornered Hat*. Orchestre National de la Radiodiffusion Française under Toldra. Angel 35553. \$4.98. The complete ballet, replete with fascinating Spanish rhythms and tunes. Consuelo Rubio sings briefly and well. The orchestra plays with the necessary verve. Understanding conducting. Very fine, round, full recording. There's no better disk of this in the Schwann catalog. **AA AA**

Geminiani: *Concerti Grossi* (Op. 7). I Musici. Epic LC 3467. \$3.98. Orchestral works in the style of Corelli, composed in the early part of the 18th century. Exquisite workmanship and charming melodies throughout. Beautifully played and recorded. **AA AA**

Mendelssohn: *A Midsummer Night's Dream* & **Schubert:** *Rosamunde*. Concertgebouw Orchestra under Szell. Epic LC 3433. \$3.98. Incidental music to plays. Youthful, spirited, melodic music. More nuance would help, but the playing is often brilliant. Well recorded. **A AA**

Mussorgsky: *Pictures at an Exhibition*. Chicago Symphony under Reiner. RCA Victor LM 2201. \$4.98. Brilliantly orchestrated by Ravel from the piano score. The music cleverly describes pictures seen at the Hartmann memorial exhibition. Reiner reveals designs and colors often subdued, but the choice remains Toscanini on RCA Victor LM 1838. Reiner's recording is better, but Toscanini's is more than adequate. **A AA**

Prokofiev: *Symphony No. 5*. Philadelphia Orchestra under Ormandy. Columbia ML 5260. \$3.98. Readily accessible, melodic work first performed in 1945. Honesty and straightforwardness in the performance, which is what the music needs. Well recorded. **AA AA**

Respighi: *The Birds and Brazilian Impressions*. London Symphony under Dorati. Mercury MG 50153. \$4.98. An Italian describes bird sounds of Brazil in one piece and presents three impressions of Brazil in another. Not great music, but off the beaten path, pleasing, atmospheric. Very well played and recorded. **AA AA**

Schumann: *Cello Concerto* & **Saint Saëns:** *Cello Concerto*. Janos Starker (cello) with the Philharmonia Orchestra under Giulini. Angel 35598. \$4.98. Two staple selections for cello soloists. Nearly first class cello playing, though less romantic and moving than I prefer. Commendable teamwork on the part of the orchestra.

Excellent balance in the recording and wide sonic range. **A AA**

Tchaikovsky: *Concerto No. 1*. Van Cliburn (piano) with Orchestra under Kondrashin. RCA Victor LM 2252. \$4.98. The playing of this concerto helped the soloist win the International Tchaikovsky competition in Moscow. He plays with much rubato, in the style of some of the great 19th century masters. Marvelous technique. The teamwork with the orchestra is uncommonly good. But not everyone will care for this. Still in the running are the performances featuring Gilels, Rubinstein, Solo-mon. **AA AA**

Telemann: *Concerto for Oboe, Viola, Violin*. Solisti di Zagreb under Janigro. Bach Guild BG 575. \$4.98. Well rehearsed chamber orchestra of 13 strings plus soloists performs five works. None of the music is great. It's the music of a lesser composer of Bach's time. The performers do full justice to the music and the recording is excellent. **AA AA**

Weill: *Mahagonny*. Lotte Lenya, etc., with Orchestra and Chorus under Brückner-Rügeberg. 6 sides, Columbia K3L 243. \$11.94. This tawdry, decadent, tragic opera had its first performance in 1930 and hasn't been heard much since. Marvelous performance in its way, with Lotte Lenya's singing-speaking style appropriate. The musical style ranges from popular to operatic. It's not everyone's dish—but it is well done. **AA AA**

Francescatti: (violin). Columbia ML 5253. \$3.98. *Zigeunerweisen*, *Havanaise*, *Introduction*, and *Rondo Capriccioso*, *Poème*. . .with orchestra support under William Smith. Francescatti is thoroughly at home in these romantic staples of the violin literature and his graceful style fits like a glove. But he rarely gets beneath the surface of the *Capriccioso* and *Poème*. **A AA**

Rita Streich—A Song Recital (soprano). Decca DL 9972. \$3.98. Included are songs by Schubert, Wolf, Strauss, Nicolai, Milhaud. Miss Streich sings on pitch and with pleasing tone, but others dig deeper into the meaning of the songs. Well recorded. **A AA**

Sibelius Song Recital. Kim Borg (bass). Decca DL 9983. \$3.98. Eighteen songs presented by a countryman of Sibelius. His voice is rich, lyric, but more authority and drama is needed. Well recorded. **A AA**

Wine, Women and Song. Men's Choral Society of Vienna with the Vienna Symphony under Etti and Strauss. Epic LC 3469. \$3.98. Some of these polkas, mazurkas, waltzes are performed by the orchestra, some by orchestra and chorus. Reminiscent of an annual Volksfest—fun in the Austrian manner. Well performed and recorded. **AA AA**

Viennese Bonbons (Vol. 3). Anton Karas (zither) and His Two Rudis (accordions). Period RL 1923. \$3.98. Lots of Viennese atmosphere here in the instrumentation and in the tunes, which are principally waltzes and polkas. Genuinely listening. Smoothly recorded, expertly played. **AA AA**

Many performances discussed in this column will soon be available on stereo records, too. In such cases the comments and ratings do not change, but the sound will be different. Not all stereo records will sound better, either. Readers who employ two or more loud-speaker systems as required for stereo will find monaural records sound better than when played through a single speaker system. Such sound will lead some to ask if the difference between monaural and stereo is worth the additional cost in equipment and records. It is estimated that no more than 2 percent of the records sold this year will be stereo. Until such time as stereo record sales increase to a really substantial figure, this column will continue to serve the vast majority of its readers who buy monaural records.

Price-conscious consumers vs. high-pressure salesmen

IT IS FASHIONABLE THESE DAYS for retailers to complain that consumers are so price conscious that there is no satisfying them. They do comparison shopping while on vacation, on their days off, and even on Sunday when taking the family for an automobile ride. The discount houses that have developed a form of large scale selling at bargain prices are held responsible for driving out of business many regular distributors who cannot meet the competition of the price-first, service-second appeal of dealers selling far below list.

The vigorous campaign of the Better Business Bureaus throughout the country has educated many consumers to realize that list prices don't mean a thing or at any rate have little relation to the price at which a product is expected to be sold. Discount houses and conventional dealers alike have used phony list prices as a technique for persuading customers that they are getting a bargain at 20, 30, even 40 percent off list when they are actually paying the normal or market price for a product.

As competition has become stiffer and sales fewer, the hard-sell boys are developing other techniques for "nailing down" customers who venture into their shops. Consumers will need to be strong-willed to withstand some of these tactics that have been outlined in a series of articles in Home Furnishings Daily, a Fairchild publication, by dealers who look upon themselves as locked in a no-holds-barred contest forced on them "by cut-throat competition and price-conscious consumers."

One dealer reports that he clinches a sale with an indecisive prospect on whom he has spent considerable time selling an appliance by offering a beautiful lamp reposing near by, which he admits is worth all of 89 cents, as a bonus for a prompt signature on a sales contract. Another technique that is worked with television and hi-fi sets is to offer to have the set installed that day, which is accomplished by delivering the display sample instead of ordering a new one from the warehouse. Another clincher is for the salesman to pick up the inventory sheet on appliances and remark that he has only one left of that particular model, and that the price is a "special." If the customer shows interest, the salesman makes a telephone call to his wife, pretending he is talking to the warehouse, and reports there is only one left in stock.

Then there is the tactic called "burn and

switch." The prospective customer comes in and asks for a particular appliance by brand and is quoted a very attractive price that, as the salesman puts it, is "absolute zero." By skillful comments he subsequently makes the appliance seem like an absolute dud. If it is a washing machine, the filter has rust on it or the machine tangles the clothes, or it shows excessive vibration. If it is a refrigerator, he may suggest that the door latch is likely to last only six months. Perhaps it is a television set, and that can be tried out on a bad antenna hookup with correspondingly poor results. As Home Furnishings Daily puts it, "even the most respected names in the industry are not immune to the switch." Once the salesman has talked the shopper out of the item he came for, it is easy to work in reverse on some make on which a better profit can be made. One salesman took the position that the worst that could happen was that the shopper would refuse to be switched. In that event, his order was taken at the low figure quoted for the make he wanted, and then it would turn out that the merchandise was not available anyway.

Off-brands are extensively promoted by some salesmen, particularly if the off-brand has a name that bears a resemblance to a well-known name. One reason that the high-pressure salesman likes to push the off-brand is that it is much less likely to have been comparison-shopped than a more widely advertised make; since it cannot be compared feature for feature and sells for considerably less, it will appear to be a real bargain. In some cases the item may have a part or component made by a well-known manufacturer and in that event this feature will be played up and the unknown manufacturer of the appliance itself played down in the advertising or label. An example is that of an off-brand of a so-called hi-fi phonograph which had a record changer of well-known make. The label showed the name of the changer's maker in big bold print, while the name of the unknown maker of the phonograph itself appeared in small letters.

The old days of "let the buyer beware" are with us again. Home Furnishings Daily is to be complimented for turning the spotlight on current high-pressure practices. Consumers are learning how to discriminate, but they will need to keep up with the new sales tactics if they are to get the most for their money at the price-cutting retail outlets and discount shops.



E. R. Kalmback Fish and Wildlife Service

Control of house mice in the home

THE COMMON HOUSE MOUSE is more destructive than any of the other 300-odd kinds of native mice found in North America. It will eat many foods, gnaw woodwork, damage furniture, take off bits of clothing for nesting material, or become a nuisance by the noises it makes.

Since the mouse lives in close proximity to man, probably the greatest hazard is caused through contamination of food. Filth, bacteria, and insects may be transported on the fur and feet of mice. One disease that is transmitted to man by bites of mites carried on house mice is rickettsialpox (an infectious disease characterized by fever, chills, headache, rash, and other symptoms).

There are some general principles that will be helpful in preventing and controlling an infestation. "Build out" mice by closing all holes in exterior walls and permit no spaces over $\frac{1}{8}$ inch in width around doors, windows, or other such openings, either inside the premises or on outside doors and windows. Protect food by keeping it in tightly closed metal containers, so far as practicable and necessary. Keep premises clean, as mice can subsist on small scraps of food. Remove shelter and nesting places so far as practical.

When an infestation occurs, use traps, poisoned baits, or a DDT tracking powder, to be discussed

later. Mice may not travel far when food and shelter are nearby. Many live their entire lives in a 10-foot radius. Control methods must be applied at frequent intervals or concentrated at points where mice are known to exist. These little animals are light, intermittent, and erratic feeders.

When there are few mice, trapping is recommended. Use several wooden-base snap traps. Place them at right angles along walls, between objects, or by holes or mouse-damaged materials. Good baits are peanut butter, cake, doughnuts, bacon, nut meats, sunflower seeds, milk chocolate, and gum drops. A sprinkle of rolled oats over and around baited traps is sometimes helpful.

Where quick control is desired and danger of accidental poisoning is not likely, ready-to-use baits made with strichnine may be purchased. Use teaspoonful quantities of the bait for each location. However, mice will soon develop an aversion to this poison. Do not use it more frequently than intervals of six months. Bear in mind that strichnine is extremely poisonous and it must not be used if there is the slightest possibility that children or domestic animals could have access to it.

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**COMING
IN FUTURE
BULLETINS**

Ice skates

Aerflyte	Canadian Flyer	Ice Wing
Basco	C.C.M.	Planert
Brooks	Hyde	Rink Leader

Storage batteries

All-State	Firestone
Atlas	Ford
Auto-Lite	Wards
Delco	Willard
Exide	Wizard

Television receivers

Admiral	Motorola	Silvertone
General Electric	Philco	Westinghouse
Hoffman	RCA	Zenith
	Sylvania	

Electric shavers

Bulova	Ronson
Norelco	Schick
Remington	Sunbeam

Consumer Bulletin

The pioneer consumer magazine, testing and reporting on products since 1928.

Published by Consumers' Research, Inc., Washington, New Jersey.